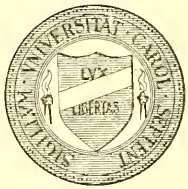
THE UNIVERSITY OF NORTH CAROLINA

THE ONE HUNDRED AND
NINETEENTH SESSION



THE CATALOGUE
1913-1914

1914

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Calendar

1914

June 10–July 22	Summer Term for Teachers.
June 18–August 28	Summer Law School.
September 2–5	*Wednesday to Saturday.* Examinations for Removal of Conditions.
September 7–9	*Monday to Wednesday.* Entrance Examinations. Registration.
September 10	*Thursday.* Lectures begin (Fall Term).
October 12	*Monday.* University Day.
November 26	Thanksgiving Day.
December 22	*Tuesday.* Christmas Recess begins (1:30.)

1915

January 4–5	*Monday and Tuesday.* Registration.
January 6	*Wednesday.* Lectures begin.
January 20–30	Mid-Year Examinations.
February 1	*Monday.* Lectures begin (Spring Term.)
February 22	*Monday.* Washington's Birthday.
May 1	*Saturday.* Selection of Commencement Orators.
May 18–28	Final Examinations.
May 30	*Sunday.* Baccalaureate Sermon. Sermon before the Y. M. C. A.
May 31	*Monday.* Senior Class Day. Inter-Society Banquet and Reunions.
June 1	*Tuesday.* Alumni Day. Meeting of the Board of Trustees. Inter-Society Debate.
June 2	*Wednesday.* Commencement Day. Summer Vacation begins.
September 1–4	*Wednesday to Saturday.* Examinations for Removal of Conditions.

PART ONE

FOUNDATION AND GOVERNMENT
TRUSTEES
FACULTY
COMMITTEES

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The University

Foundation and Government. The University was established in obedience to the first Constitution of the State, which was adopted in December, 1776. A clause of section XLI declared that "all useful learning shall be duly encouraged, and promoted in one or more universities." The charter was granted by the General Assembly in 1789, the cornerstone of the Old East Building was laid in 1793, and the University was opened in 1795.

The title, preamble, and first section of the Act of incorporation are as follows:

"AN ACT TO ESTABLISH A UNIVERSITY IN THIS STATE."

"Whereas in all well regulated Governments, it is the indispensable Duty of every Legislature to consult the Happiness of a rising Generation, and endeavor to fit them for an honorable Discharge of the Social Duties of Life, by paying the strictest attention to their Education: And whereas an University supported by permanent Funds, and well endowed, would have the most direct Tendency to answer the above Purpose:

"I. *Be it therefore enacted by the General Assembly of the State of North Carolina, and it is hereby enacted by the Authority of the Same,* That, *Samuel Johnson, James Iredell, Charles Johnson, Hugh Williamson, Stephen Cabarrus, Richard Dobbs Spaight, William Blount, Benjamin Williams, John Sitgreaves, Frederick Hargett, Robert Snead, Archibald Maclaine,* Honourable *Samuel Ashe, Robert Dixon, Benjamin Smith,* Honourable *Samuel Spencer, John Hay, James Hogg, Henry William Harrington, William Barry Grove,* Reverend *Samuel M'Corkle, Adlai Osborne, John Stokes, John Hamilton, Joseph Graham,* Honourable *John Williams, Thomas Person, Alfred Moore, Alexander Mebane, Joel Lane, Willie Jones, Benjamin Hawkins, John Haywood,* senior, *John Macon, William Richardson Davie, Joseph Dixon, William Lenoir, Joseph M'Dowell, James Holland and William Porter,* Esquires, shall be and they are hereby declared to be a body politic and corporate to be known and distinguished by the name of *The Trustees of the University of North Carolina** and by that name shall have perpetual Succession and a common Seal; and that they the Trustees and their Successors, by the Name aforesaid, or a Major-

*The corporate name has been changed to The University of North Carolina.

ity of them, shall be able and capable in Law to take, demand, receive and possess all Monies, Goods and Chattels that shall be given them for the Use of the said University, and the same apply according to the Will of the Donors, and by Gift, Purchase or Devise to take, have, receive, possess, enjoy and retain to them and their Successors forever, any Lands, Rents, Tenements and Hereditaments, of what Kind, Nature or Quality soever the same may be, in special Trust and Confidence that the same or Profits thereof shall be applied to and for the Use and Purpose of establishing the said University."*

The University is governed by a board of trustees elected by the Legislature and is free from sectionalism, sectarian, or political control. The Governor of the State is *ex-officio* President of the Board of Trustees.

Article IV of the Constitution of 1876 contains the following provisions regarding the University:

"SEC. 6. The General Assembly shall have power to provide for the election of Trustees of the University of North Carolina, in whom, when chosen, shall be vested all the privileges, rights, franchises, and endowments thereof, in anywise granted to or conferred upon the Trustees of said University; and the General Assembly may make such provisions, laws, and regulations from time to time as may be necessary and expedient for the maintenance and management of said University.

"SEC. 7. The General Assembly shall provide that the benefits of the University, as far as practicable, be extended to the youth of the State free of expense for tuition: also all the property which has heretofore accrued to the State, or shall hereafter accrue, from escheats, unclaimed dividends, or distributive shares of the estate of deceased persons, shall be appropriated to the use of the University."

LOCATION. The seat of the University is Chapel Hill, Orange County, twenty-eight miles northwest of Raleigh. Two daily passenger trains run between Chapel Hill and University Junction, a station on the North Carolina Railroad. The site for the institution was selected because of its healthfulness, its freedom from malaria, its supply of pure water, its beautiful scenery, and its central location in the State.

EQUIPMENT. The University campus contains forty-eight acres of land, affording ample grounds for building and for all sorts of athletic sports. The University owns, contiguous to

*Laws of the State of North Carolina, published by James Iredell, Edenton, MDCCXCI.

the campus, five hundred acres of forest lands, which are partly laid off in walks and drives. The University has twenty-five buildings.

The South Building contains one lecture room and thirty living rooms.

The Old East Building contains two lecture rooms and twenty-eight living rooms.

The Old West Building contains two lecture rooms, the Historical Museum, and twenty-seven living rooms.

Person Hall contains the Pharmaceutical Laboratories and three lecture rooms.

Gerrard Hall is used for morning prayers, for mass meetings and other student assemblies, and for public lectures.

Smith Hall contains the Law library and lecture rooms.

The New West Building contains the Dialectic Literary Society's Hall, one lecture room and eleven living rooms.

The New East Building contains the Philanthropic Literary Society's Hall, the Geological Laboratory and Museum, the offices of the North Carolina Geological Survey, and fourteen living rooms.

Memorial Hall commemorates the illustrious dead of the University. It is used at Commencement for public exercises.

The Alumni Hall contains the offices of administration, the Physical Laboratories, and nine lecture rooms.

The Carr Building, the gift of Gen. J. S. Carr, contains forty-two living rooms.

The Smith Building contains forty living rooms.

The William Preston Bynum, Jr., Gymnasium is the gift of Judge William Preston Bynum, in memory of his grandson, William Preston Bynum, Jr., of the class of 1893. It is furnished with modern apparatus, swimming pool, baths, lockers, and running track; and contains a trophy room and the office of the Instructor in Physical Training.

The Young Men's Christian Association Building is a valuable adjunct to the work of the Association.

Chemistry Hall contains Chemical Laboratories, lecture rooms, offices for instructors, and store rooms.

The new *Library* building, given by Andrew Carnegie, Esq., has now been in use for six years.

Davie Hall, the Biological Laboratory, contains laboratories and lecture rooms for zoology and botany.

Caldwell Hall, just completed, is used exclusively by the School of Medicine, and contains laboratories, lecture rooms, dissecting rooms, and offices for the instructors.

The New Educational Building, the gift of the Peabody Board, contains lecture rooms, offices, library, and auditorium and is splendidly equipped in every detail.

The Infirmary, a spacious and completely equipped building, is open to all students of the University.

The New Dormitories, Battle, Vance, and *Pettigrew* Sections, contain seventy-two rooms in suite for the use of students.

Commons contains a dining hall where students obtain board at ten dollars a month. The whole enterprise was made possible through the beneficence of Mrs. Frederick Baker, of New York. A new dining hall, now being built, will be ready for use by the coming Session.

University Inn is used for dormitory purposes, and contains a dining hall where students obtain board at fifteen dollars a month.

The Power House contains the electric lighting plant, the central heating plant, the pumps of the system of water supply, and the rooms of the University Press.

The general equipment has been improved by a thorough system of sewers and baths, a supply of pure water in all the buildings, and hot water heat in all the offices, recitation rooms, reading rooms and living rooms. A filter plant and reservoir have just been added.

College Year. The College year begins on the second Thursday in September. It is divided into two terms of four and a half months each. Commencement is held on Wednesday before the first Thursday in June. The summer vacation begins on Commencement day and ends on the Wednesday before the second Thursday in September. There is a Christmas recess of about ten days. The twelfth of October (University Day), Thanksgiving Day, and the twenty-second of February (Washington's Birthday) are holidays.

DEGREES. The degrees of Bachelor of Arts, Bachelor of Science, Master of Arts, Master of Science, Doctor of Philosophy, Bachelor of Laws, and Graduate of Pharmacy are conferred by vote of the Trustees, after the recommendation of the Faculty, upon candidates who have satisfied the requirements of residence and study at the University. Students who are not candidates for a degree may elect any studies they wish, subject to the Committee on Courses, devoting their time entirely to one or two subjects, or selecting groups of such subjects as suit their tastes and purposes.

GRADUATE STUDENTS. Free instruction is given in the College to graduates of colleges and universities. Women are admitted to the higher courses of the University.

PHYSICAL TRAINING. Hearty encouragement is given to athletic sports and to all kinds of physical culture. The athletic field furnishes ample facilities for football and baseball. The Lake Track is admirably adapted for running, bicycling, and general track athletics. Fifteen tennis courts are located on the campus. Systematic exercise in the Bynum Gymnasium under a skilled instructor is required of all students in the College, except Seniors.

GENERAL CULTURE. Chapel Exercises are conducted in Gerrard Hall, with the reading of the scriptures and singing, every weekday morning except Saturday, at 9:25 o'clock. At the same hour timely talks are given by different members of the Faculty. Attendance at this service is required of all undergraduates, unless especially excused. Bible classes for young men are taught in each of the four churches of the village every Sunday. Religious services are held twice a week, or oftener, in each church. A series of sermons is delivered annually by the University Preachers, chosen by the Trustees from the various denominations. Bible lectures are delivered every Sunday morning in Gerrard Hall. The Young Men's Christian Association meets three times a week, for prayer and other services, and conducts a series of Bible courses, which are largely attended by the students.

DISCIPLINE. The University endeavors to make young men manly and self-reliant, and to develop character by educating the conscience. The Faculty may, at their discretion, admon-

ish, suspend, or dismiss students for neglect of duty or for misconduct.

Medical Attention. In order to secure responsible and efficient medical advice and to provide proper attention for the student during sickness the University employs a practicing physician and maintains a well appointed infirmary. The Infirmary is equipped with all necessary conveniences and comforts, is under the immediate supervision of the University Physician, and is provided with an experienced nurse. At the discretion of the University Physician a student may be admitted to its wards and for such services as may be rendered by the staff no charges are made, but should any additional service (consultations, special nurses, operations requiring the attendance of a trained surgeon), recommended by the attending physician and approved by the parent or guardian, be necessary, the student will be required to pay for such services.

Trustees

LOCKE CRAIG, Governor, President *ex-officio* of the Board of Trustees.

JAMES YADKIN JOYNER, Superintendent of Public Instruction, member *ex-officio* of the Board of Trustees.

RICHARD HENRY LEWIS, Secretary.

MEMBERS OF THE BOARD

1915*

Paul Reese Capelle	Nash.
Kemp Plummer Battle	Orange.
Bennehan Cameron	Durham.
Adolphus Hill Eller	Forsyth.
John William Fries	Forsyth.
William Anderson Guthrie	Durham.
Edward Joseph Hale	Cumberland.
Henry Augustus Gilliam	Edgecombe.
Nelson McPherson Ferrebee	Granville.
John Lamb	Martin.
Richard Henry Lewis	Wake.
Angus Wilton McLean	Robeson.
Robert Diggs Wimberly Connor	Wake.
Addison Goodloe Mangum	Gaston.
James Smith Manning	Durham.
John Archibald Parker	Mecklenburg.
Jeter Connelly Pritchard	Buncombe.
Thomas Davis Warren	Craven.
Henry M. Weil	Wayne.
John Kenyon Wilson	Pasquotank.

1917

Alexander Boyd Andrews	Wake.
David Collin Barnes	Hertford.
John Robert Williams	Johnson.
Eric Alonzo Abernethy	Orange.
Julian Shakespeare Carr	Durham.
Josephus Daniels	Wake.
Augustus Washington Graham	Granville.
John Bryan Grimes	Pitt.

*The legal term of office expires November 30 of the year indicated.

John George Hannah, Jr. ..... Chatham.
Luther Thompson Hartsell ..... Cabarrus.
Alfred Williams Haywood ..... Alamance.
John Wetmore Hinsdale, Jr. ..... Wake.
Franklin P. Hobgood ..... Granville.
William Stamps Howard ..... Edgecombe.
Henry Armand London ..... Chatham.
Paul Jones Long ..... Northampton.
George McNeill Rose ..... Cumberland.
William Rufus Edmonds ..... Guilford.
James Sprunt ..... New Hanover.
George Stephens ..... Mecklenburg.

1919

J. Oscar Atkinson ..... Alamance.
Victor Silas Bryant ..... Durham.
William Hyslop Sumner Burgwyn, Jr ..... Northampton.
William Preston Bynum, Jr. ..... Guilford.
James Osborn Carr ..... New Hanover.
John Henry Dillard ..... Cherokee.
John Washington Graham ..... Orange.
Marmaduke Jones Hawkins ..... Warren.
John Edward Swain ..... Buncombe.
Walter Murphy ..... Rowan.
Robert Stuart Hutchison ..... Mecklenburg.
Charles Lee Smith ..... Wake.
David Stern ..... Guilford.
Zeb Vance Walser ..... Davidson.
Charles Whedbee ..... Perquimans.
Willliam Thornton Whitsett ..... Guilford.
Francis Donnell Winston ..... Bertie.
Charles Williams Worth ..... New Hanover.
Fred A. Woodward ..... Wilson.
Emmett Roberson Wooten ..... Lenoir.

1921

Thomas Hall Battle ..... Nash.
James McEntire Carson ..... Rutherford.
William Edmond Breese ..... Transylvania.
Frederick Jackson Coxe ..... Anson.
Willie Reid Dalton ..... Rockingham.
Claudius Dockery ..... Wake.
Rufus Alexander Doughton ..... Allegheny.
Robert Charles Ellis ..... Cleveland.
William Nash Everett ..... Richmond.

James Alexander Gray, Jr. ..... Forsyth.
Thomas Jackson Gold ..... Guilford.
John Sprunt Hill ..... Durham.
John Allen Holt ..... Guilford.
Charles Clarke Loughlin ..... New Hanover.
George B. McLeod ..... Robeson.
John Motley Morehead ..... Mecklenburg.
Haywood Parker ..... Buncombe.
Augustus Hobson Price ..... Rowan.
James Dick Proctor ..... Robeson.
Alfred Moore Scales ..... Guilford.

COMMITTEES OF THE TRUSTEES

EXECUTIVE COMMITTEE

Governor Locke Craig, Chairman.

Alexander B. Andrews,
*Charles B. Aycock,
*Richard H. Battle,
Victor S. Bryant,
Julian S. Carr,
Josephus Daniels,
Claudius Dockery,
John W. Graham,
*Robert T. Gray,
J. Bryan Grimes,
Edward J. Hale,
James Y. Joyner,
*Thomas S. Kenan,
Richard H. Lewis,
James S. Manning,
Charles Lee Smith,
Charles Whedbee.

VISITING COMMITTEE

James Sprunt,
William Edmond Breese,
Larry I. Moore.

*Dead.

FACULTY

OFFICERS OF ADMINISTRATION

*FRANCIS PRESTON VENABLE, Ph. D., D. Sc., LL. D., President.

EDWARD KIDDER GRAHAM, A. M., Dean of the College of Liberal Arts and Acting President.

MARVIN HENDRIX STACY, A. M., Acting Dean of the College of Liberal Arts.

ANDREW HENRY PATTERSON, A. M., Dean of the School of Applied Science.

CHARLES LEE RAPER, Ph. D., Dean of the Graduate School.

LUCIUS POLK MCGEHEE, A. B., Dean of the School of Law.

ISAAC HALL MANNING, M. D., Dean of the School of Medicine.

EDWARD VERNON HOWELL, A. B., Ph. G., Dean of the School of Pharmacy.

MARCUS CICERO STEPHENS NOBLE, Dean of the School of Education.

OFFICERS OF INSTRUCTION

*FRANCIS PRESTON VENABLE, Ph. D., D. Sc., LL. D., Professor of Chemistry.

Student, University of Virginia, 1874-1879; University of Bonn, 1879-1880; A. M., Ph. D., University of Goettingen, 1881; Student, University of Berlin, 1889; LL. D., University of Pennsylvania, 1901; D. Sc., Lafayette College, 1902; LL. D., University of South Carolina, 1905; LL. D., University of Alabama, 1906; Professor of Chemistry, University of North Carolina, 1880-1900; President, *ibid.*, 1900—

KEMP PLUMMER BATTLE, A. M., LL. D., Professor Emeritus of History.

A. B., University of North Carolina, 1849; A. M., *ibid.*, 1852; Tutor in Mathematics, *ibid.*, 1850-1854; LL. D., Davidson College, 1879; President University of North Carolina, 1876-1891; Professor of History, *ibid.*, 1891-1907; LL. D., *ibid.*, 1910; Professor Emeritus of History, *ibid.*, 1907—

*Absent on leave 1913-1914.

WALTER DALLAM TOY, M. A., Professor of the Germanic Languages and Literatures.

M. A., University of Virginia, 1882; Student, University of Leipzig, 1882-1883, University of Berlin, 1883-1885, Collège de France, 1885; Professor of Germanic Languages and Literatures, University of North Carolina, 1885—; Student, University of Berlin, 1910-1911.

WILLIAM CAIN, A. M., Professor of Mathematics.

A. M., North Carolina Military Polytechnic Institute, 1866; Professor of Mathematics and Engineering, Carolina Military Institute, 1874-1879; Professor of Mathematics and Engineering, South Carolina Military Academy, 1882-1889; Professor of Mathematics, University of North Carolina, 1889—

HENRY HORACE WILLIAMS, A. M., B. D., Professor of Philosophy.

A. B., A. M., University of North Carolina, 1883; Professor of Philosophy, Trinity College (N. C.), 1885; B. D., Yale University 1888; Fellow, Harvard University 1889; Professor of Philosophy, University of North Carolina, 1896—

HENRY VANPETERS WILSON, Ph. D., Professor of Zoology.

A. B., Johns Hopkins University, 1883; Fellow, *ibid.*, 1887-1889; Ph. D., *ibid.*, 1888; Professor of Biology, University of North Carolina, 1891-1904; Student, University of Berlin, 1902-1903; Professor of Zoology, University of North Carolina, 1904—

COLLIER COBB, A. M., Professor of Geology and Mineralogy.

A. B., Harvard University, 1889; A. M., *ibid.*, 1894; Assistant in Geology, *ibid.*, 1888-1890; Instructor in Geology, Massachusetts Institute of Technology, 1890-1892; Instructor in Geology, Harvard Summer School, 1891; Assistant Professor of Geology, University of North Carolina, 1892-1893; Professor of Geology and Mineralogy, *ibid.*, 1893—

CHARLES STAPLES MANGUM, A. B., M. D., Professor of Anatomy.

A. B., University of North Carolina, 1891; M. D., Jefferson Medical College, 1894; Assistant and Demonstrator, *ibid.*, 1894-1895; Graduate Student, University of Chicago, 1906; Professor of Anatomy, University of North Carolina, 1896—; Student, Harvard University, 1912, 1913.

EDWARD VERNON HOWELL, A. B., Ph. G., Professor of Pharmacy.

A. B., Wake Forest College, 1892; Ph. G., Philadelphia College of Pharmacy, 1894; Professor of Pharmacy and Dean of the School of Pharmacy, University of North Carolina, 1897—

MARCUS CICERO STEPHENS NOBLE, Professor of Pedagogy.

Student, Davidson College and University of North Carolina; Commandant, Bingham School, 1880-1883; Superintendent of Schools, Wilmington, N. C., 1883-1898; Professor of Pedagogy, University of North Carolina, 1898—; Dean of the School of Education, *ibid.*, 1913—

ISAAC HALL MANNING, M. D., Professor of Physiology.

Student, University of North Carolina, 1882-1886; Assistant in Chemistry, *ibid.*, 1886; M. D., Long Island College of Medicine, 1897; Graduate Student, University of Chicago, 1901, 1903, Harvard University, 1902, 1906; Professor of Physiology, University of North Carolina, 1901—; Dean of the School of Medicine, *ibid.*, 1905—

GEORGE HOWE, Ph. D., Professor of the Latin Language and Literature.

A. B., Princeton University, 1897; A. M., Ph. D., University of Halle, 1903; Student, Oxford University, 1903; Professor of Latin Language and Literature, University of North Carolina, 1903—; Student, American School of Classical Studies at Rome, 1912-1913.

JOSEPH HYDE PRATT, Ph. D., Professor of Economic Geology.

Ph. B., Yale University, 1893; Assistant in Chemistry, *ibid.*, 1894; Assistant in Mining, *ibid.*, 1895; Instructor in Mining, Harvard Summer School, 1895; Ph. D., Yale University, 1896; Instructor in Mineralogy, *ibid.*, 1896-1897; Lecturer on Economic Geology, University of North Carolina, 1899-1904; Professor of Economic Geology, *ibid.*, 1904—; State Mineralogist, 1897-1906; State Geologist, 1906—

CHARLES HOLMES HERTY, Ph. D., Smith Professor of General and Industrial Chemistry.

Ph. B., University of Georgia, 1886; Ph. D., Johns Hopkins University, 1890; Instructor in Chemistry, University of Georgia, 1891-1894; Adjunct Professor of Chemistry, *ibid.*, 1894-1902; Student, University of Zurich and University of Berlin, 1899-1900; Professor of Chemistry, University of North Carolina, 1905—; Dean of the School of Applied Science, *ibid.*, 1908-1911.

NATHAN WILSON WALKER, A. B., Professor of Secondary Education.

A. B., University of North Carolina, 1903; Superintendent of Schools at Ashboro, N. C., 1903-1905; Professor of Secondary Education, University of North Carolina, 1905—; State Inspector of Public High Schools, 1905—

WILLIAM DEBERNIERE MACNIDER, M. D., Professor of Pharmacology.

Assistant in Biology, University of North Carolina, 1899-1900; Assistant in Anatomy, *ibid.*, 1900-1901; M. D., *ibid.*, 1903; Student, University of Chicago, 1906, 1907, 1908; Professor of Pharmacology, University of North Carolina, 1905—

CHARLES LEE RAPER, Ph. D., Professor of Economics.

A. B., Trinity College, (N. C.), 1892; Instructor in Greek and Latin, *ibid.*, 1892-1893; Professor of Latin, Greensboro Female College, 1894-1898; Fellow in History, Columbia University, 1899-1900; Lecturer in History, *ibid.*, 1900-1901; Ph. D., *ibid.*, 1902; Associate Professor of Economics and History, University of North Carolina, 1901-1906; Professor of Economics, *ibid.*, 1906—; Dean of Graduate School, *ibid.*, 1909—

EDWARD KIDDER GRAHAM, A. M., Professor of English.

Ph. B., University of North Carolina, 1898; Librarian, *ibid.*, 1899; Instructor in English, *ibid.*, 1899-1901; Associate Professor of English, *ibid.*, 1901-1904; A. M., Columbia University, 1902; Student, *ibid.*, 1904-1905; Professor of English, University of North Carolina, 1904—; Dean of College of Liberal Arts, *ibid.*, 1909—; Acting President, *ibid.*, 1913-1914.

WILLIAM CHAMBERS COKER, Ph. D., Professor of Botany.

B. S., University of South Carolina, 1894; Ph. D., Johns Hopkins University, 1901; Student, University of Bonn, 1901-1902; Associate Professor of Botany, University of North Carolina, 1902-1907; Professor of Botany, *ibid.*, 1907—

ARCHIBALD HENDERSON, Ph. D., Professor of Pure Mathematics.

A. B., University of North Carolina, 1898; A. M., *ibid.*, 1899; Instructor in Mathematics, *ibid.*, 1898-1902; Student, University of Chicago, 1901; Ph. D., University of North Carolina, 1902; Fellow and Tutor in Mathematics, University College and University of Chicago, 1902-1903; Associate Professor of Mathematics, University of North Carolina, 1902-1908; Professor of Pure

Mathematics, *ibid.*, 1908—; Student, Cambridge University, University of Berlin, the Sorbonne, 1910-1911.

JOSEPH GREGOIRE DEROULHAC HAMILTON, Ph. D., Alumni Professor of History.

M. A., University of the South, 1900; Ph. D., Columbia University 1906; Associate Professor of History, University of North Carolina, 1906-1908; Professor of History, *ibid.*, 1908—

ANDREW HENRY PATTERSON, A. M., Professor of Physics.

Ph. B., B. E., University of North Carolina, 1891; A. B., Harvard University, 1892; A. M., *ibid.*, 1893; Instructor in Physics, University of Georgia, 1894-1897; Adjunct Professor of Physics and Electrical Engineering, *ibid.*, 1897-1898; Professor of Physics and Astronomy, *ibid.*, 1898-1908; Student, University of Berlin and Charlottenburg Technische Hochschule, 1905-1906; Student, Cambridge University, 1906; Professor of Physics, University of North Carolina, 1908—; Dean of the School of Applied Science, *ibid.*, 1911—

HENRY MCGILBERT WAGSTAFF, Ph. D., Professor of History.

Ph. B., University of North Carolina, 1899; Professor of Mathematics, Rutherford College, (N. C.), 1900-1902; Ph. D., Johns Hopkins University, 1906; Acting Professor of Economics and History, Alleghany College, 1906-1907; Associate Professor of History, University of North Carolina, 1907-1909; Professor of History, *ibid.*, 1909—

PATRICK HENRY WINSTON, Professor of Law.

Student, University of Texas, 1897-1898, University of North Carolina, 1899-1900; Graduate United States Military Academy, 1905; Student, University of North Carolina School of Law, 1905; Professor of Law, *ibid.*, 1909—; Student, University of Michigan, 1910.

WILLIAM MORTON DEY, Ph. D., Professor of the Romance Languages and Literatures.

B. A., M. A., University of Virginia, 1902; Student in Paris, 1903; A. M., Harvard University, 1904; Austin Teaching Fellow, *ibid.*, 1905-1906; Ph. D., *ibid.*, 1906; Student in Spain and Italy, 1906; Assistant Professor of Romance Languages, University of Missouri, 1906-1909; Professor of Romance Languages, University of North Carolina, 1909—

MARVIN HENDRIX STACY, A. M., Professor of Civil Engineering.

Ph. B., University of North Carolina, 1902; Instructor in Mathematics, *ibid.*, 1902-1906; A. M., *ibid.*, 1904; Student, Cornell University, 1905, 1906, 1911; Associate Professor of Civil Engineering, University of North Carolina, 1906-1910; Professor of Civil Engineering, *ibid.*, 1910—; Acting Dean of the College of Liberal Arts, *ibid.*, 1913-1914.

JAMES FINCH ROYSTER, Ph. D., Professor of English.

A. B., Wake Forest College, 1900; Student, University of Chicago, 1900-1902, University of Berlin, 1902-1903; Acting Instructor, University of Colorado, 1904-1905; Fellow, University of Chicago, 1905-1906; Associate, *ibid.*, 1906-1907; Ph. D., *ibid.*, 1907; Associate Professor of English, University of North Carolina, 1907-1910; Professor of English, *ibid.*, 1910—

LUCIUS POLK MCGEHEE, A. B., Professor of Law.

A. B., University of North Carolina, 1887; Student, School of Law, *ibid.*, 1890-1891; Professor of Law, *ibid.*, 1904-1909; Dean of the School of Law, *ibid.*, 1910—

CHARLES WESLEY BAIN, M. A., LL. D., Professor of Greek.

Student, University of Virginia, 1883-1885; M. A., University of the South, 1895; Professor of Ancient Languages, University of South Carolina, 1898-1910; Professor of Greek, University of North Carolina, 1910—

ATWELL CAMPBELL MCINTOSH, A. M., Professor of Law.

A. B., Davidson College, 1881; A. M., *ibid.*, 1887; Professor of Law, Trinity College (N. C.), 1904-1910; Professor of Law, University of North Carolina, 1910—

HARRY WOODBURN CHASE, Ph. D., Professor of the Philosophy of Education.

A. B., Dartmouth College, 1904; Teacher in the Groveland High School (Mass.), 1904-1908; A. M., Dartmouth College, 1908; Director of the Clinic for Subnormal Children, Clark University, 1909-1910; Ph. D., *ibid.*, 1910; Professor of the Philosophy of Education, University of North Carolina, 1910—

ALVIN SAWYER WHEELER, Ph. D., Professor of Organic Chemistry.

A. B., Beloit College, 1890; Student, University of Chicago, 1895; Student, Cornell University, 1897; A. M., Harvard University,

1897; Assistant in Chemistry, *ibid.*, 1897-1900; Ph. D., *ibid.*, 1900; Associate Professor of Chemistry, University of North Carolina, 1900-1912; Professor of Organic Chemistry, *ibid.*, 1912—; Student, University of Berlin, University of Bonn, Swiss Federal Polytechnic, 1910-1911.

LOUIS ROUND WILSON, Ph. D., Professor of Library Administration.

A. B., University of North Carolina, 1899; Librarian, *ibid.*, 1901—; A. M., *ibid.*, 1902; Ph. D., *ibid.*, 1905; Associate Professor of Library Administration, 1907-1912; Professor of Library Administration, 1912—; Student, Columbia University, 1910.

PARKER HAYWARD DAGGETT, S. B., Professor of Electrical Engineering.

Assistant in Electrical Engineering, Harvard University, 1908-1909; S. B., *ibid.*, 1910; Acting Professor of Electrical Engineering, University of North Carolina, 1910; Associate Professor of Electrical Engineering, *ibid.*, 1910-1913; Professor of Electrical Engineering, *ibid.*, 1913—

JAMES MUNSIE BELL, Ph. D., Professor of Physical Chemistry.

B. A., University of Toronto, 1902; M. A., *ibid.*, 1905; Assistant in Chemistry, Cornell University, 1902-1903; Graduate Scholar in Chemistry, *ibid.*, 1903-1904; Sage Fellow in Chemistry, *ibid.*, 1904-1905; Ph. D., *ibid.*, 1905; Associate Professor of Physical Chemistry, University of North Carolina, 1910-1913; Professor of Physical Chemistry, *ibid.*, 1913—

EDWIN GREENLAW, Ph. D., Professor of English.

A. B., Northwestern University, 1897; A. M., *ibid.*, 1898; A. M., Harvard University, 1903; Ph. D., *ibid.*, 1904; Instructor in English, Northwestern University, 1898-1902, 1904-1905; Instructor in English, University of Chicago, 1904, 1907; Professor of English, Adelphi College, 1905-1913; Professor of English, University of North Carolina, 1913—

LESTER ALONZO WILLIAMS, A. M., Pd. D., Professor of School Administration.

A. B., Dartmouth College, 1903; A. M., New York University, 1909; Pd. D., *ibid.*, 1912; Supervisor of Schools and Principal of High Schools in Massachusetts and New Hampshire, 1903-1912; Supervising Principal, Leonia, N. J., 1913; Lecturer, Brooklyn Institute of Arts and Sciences, 1913; Professor of School Administration, University of North Carolina, 1913—

James Bell Bullitt, A. M., M. D., Professor of Histology and Pathology.

A. B., Washington and Lee University, 1894; A. M., *ibid.*, 1895; M. D., University of Virginia, 1897; Demonstrator of Anatomy, *ibid.*, 1898-1903; Professor of Anatomy and Pathology, University of Mississippi, 1903-1913; Professor of Histology and Pathology, University of North Carolina, 1913—

Thomas James Wilson, Jr., Ph. D., Associate Professor of Latin.

A. B., University of North Carolina, 1894; A. M., *ibid.*, 1896; Ph. D., *ibid.*, 1898; Instructor in Latin and Greek, *ibid.*, 1899-1901; Instructor in Latin, *ibid.*, 1901-1902; Student, University of Chicago, 1903, 1906; Associate Professor of Latin, University of North Carolina, 1902—; Registrar, *ibid.*, 1908—

William Stanly Bernard, A. M., Associate Professor of Greek.

Student, Episcopal Theological Seminary (Va.), 1893-1895; A. B., University of North Carolina, 1900; Librarian, *ibid.*, 1900-1901; Instructor in Greek, *ibid.*, 1901-1906; A. M., *ibid.*, 1904; Associate Professor of Greek, *ibid.*, 1906—; Student, University of Chicago, 1906, Columbia University, 1909, 1910, 1911.

Robert Baker Lawson, M. D., Associate Professor of Anatomy.

Student, University of North Carolina, 1897-1900; M. D., University of Maryland, 1902; Instructor in Anatomy, University of North Carolina, 1905-1906; Demonstrator in Anatomy, *ibid.*, 1906-1908; Associate Professor of Anatomy, *ibid.*, 1908.

George McFarland McKie, A. M., Associate Professor of Public Speaking.

Graduate, Emerson College of Oratory, 1898; A. B., A. M., University of North Carolina, 1907; Student, Harvard University, 1907-1908; Instructor in English, University of North Carolina, 1899-1908; Associate Professor of Public Speaking, *ibid.*, 1908—

John Manning Booker, Ph. D., Associate Professor of English.

A. B., Johns Hopkins University, 1901; Student, *ibid.*, 1901-1903, 1905-1909; Student, University of Munich, 1904-1905; Student, University of Heidelberg, 1903-1904, 1905, 1909, 1910, 1911; Ph. D., *ibid.*, 1912; Associate Professor of English, University of North Carolina, 1909—

OLIVER TOWLES, Ph. D., Associate Professor of the Romance Languages.

A. B., University of Virginia, 1906; Student, Johns Hopkins University, 1906-1909; Student in France, 1908; Ph. D., Johns Hopkins University, 1912; Associate Professor of Romance Languages, University of North Carolina, 1909—

THOMAS FELIX HICKERSON, A. M., S. B., Associate Professor of Civil Engineering.

Ph. B., University of North Carolina, 1904; Instructor in Mathematics, *ibid.*, 1905-1908; A. M., *ibid.*, 1907; S. B., Massachusetts Institute of Technology, 1909; Associate Professor of Civil Engineering, University of North Carolina, 1910—

KENT JAMES BROWN, Ph. D., Associate Professor of German.

A. B., Dickson College, 1901; Ph. D., University of Pennsylvania, 1905; Student, University of Berlin, 1904-1905; Student, University of Munich, 1909-1911; Assistant in German, University of Pennsylvania, 1902-1904; Instructor in German, State University of Iowa, 1911-1912; Associate Professor of German, University of North Carolina, 1912—

ROBERT LANE JAMES, C. E., Assistant Professor of Drawing.

Student in France, 1907-1908; C. E., Cornell University, 1912; Assistant Professor of Drawing, University of North Carolina, 1913—

ORESTES PEARLE RHYNE, Ph. D., Assistant Professor of German.

A. B., Lenoir College, 1907; A. B., University of North Carolina, 1908; Assistant in German, *ibid.*, 1908-1909; A. M., *ibid.*, 1909; Fellow, Johns Hopkins University, 1911-1913; Ph. D., *ibid.*, 1913; Assistant Professor of German, University of North Carolina, 1913—

GEORGE KENNETH GRANT HENRY, A. M., Instructor in Latin.

A. B., Hamilton College, 1900; A. M., *ibid.*, 1904; Instructor in Mathematics, University of North Carolina, 1908-1909; Instructor in Latin, *ibid.*, 1909—

JOHN GROVER BEARD, Ph. G., Instructor in Pharmacy.

Assistant in Pharmacy, University of North Carolina, 1908-1909; Ph. G., *ibid.*, 1909; Instructor in Pharmacy, *ibid.*, 1909—

VIVIAN LEROY CHRISLER, A. M., Instructor in Physics.
A. B., Piedmont College, 1902; Assistant in Physics, University of Nebraska, 1906-1909; B. S., *ibid.*, 1908; A. M., *ibid.*, 1909; Instructor in Science and Mathematics, Piedmont College, 1909-1910; Instructor in Physics, University of North Carolina, 1910—

GEORGE MARK SNEATH, A. M., Instructor in English.
A. B., Yale University, 1907; A. M., *ibid.*, 1910; Instructor in English, University of North Carolina, 1910—; Student, Harvard University, 1912.

JOHN WAYNE LASLEY, A. M., Instructor in Mathematics.
A. B., University of North Carolina, 1910; Fellow in Mathematics, *ibid.*, 1910-1911; A. M., *ibid.*, 1911; Instructor in Mathematics, *ibid.*, 1911—

DANIEL HUGER BACOT, JR., A. M., Instructor in History.
A. B., College of Charleston, 1908; Assistant in English, *ibid.*, 1908-1909; A. M., *ibid.*, 1909; Student, Harvard University, 1909-1911; A. M., *ibid.*, 1910; Instructor in History, University of North Carolina, 1911—

WILBUR HIGH ROYSTER, A. M., Instructor in Latin.
A. B., University of North Carolina, 1907; Student, Johns Hopkins University, 1907-1908; Student, American School of Classical Studies, Athens, Greece, 1908-1909; Student, Harvard University, 1909-1912; A. M., *ibid.*, 1911; Instructor in Latin, University of North Carolina, 1912—

WESLEY CRITZ GEORGE, A. M., Instructor in Zoology.
A. B., University of North Carolina, 1911; A. M., *ibid.*, 1912; Instructor in Zoology, University of North Carolina, 1912—

EUGENE FRED PARKER, A. M., Instructor in the Romance Languages.
B. S., Norwich University, 1907; A. M., Harvard University, 1909; Instructor in the Romance Languages, Union College, 1909-1911; Instructor in the Romance Languages, University of North Carolina, 1912—

JOHN ELIPHALET SMITH, M. S., Instructor in Geology.
B. S., Oregon Agricultural College, 1902; Student, University of Chicago, 1908, 1909, 1910; M. S., Iowa State College, 1911; Graduate Student and Curators' Fellow, University of Missouri, 1911-1912; Assistant in Botany, Kansas State College, 1908-1910; Instructor in Geology, University of North Carolina, 1912—

WILLIAM LEWIS JEFFRIES, A. M., Instructor in Chemistry.
A. B., University of North Carolina, 1910; Assistant in Chemistry, *ibid.*, 1910-1911; Fellow in Chemistry, *ibid.*, 1911-1913; A. M., *ibid.*, 1912; Instructor in Chemistry, *ibid.*, 1913—

EDGAR RALPH RANKIN, A. B., Instructor in Education.
A. B., University of North Carolina, 1913; Instructor in Education, *ibid.*, 1913—

WILLIAM WALTER RANKIN, JR., B. E., A. M., Instructor in Mathematics.
B. E., North Carolina Agricultural and Mechanical College, 1904; Professor of Mathematics, Fredericksburg College, 1908-1911; A. M., University of North Carolina, 1912; Fellow in Mathematics, *ibid.*, 1912-1913; Instructor in Mathematics, *ibid.*, 1913—

JAMES TALMAGE DOBBINS, A. M., Le Doux Fellow in Chemistry.

CARNIE BLAKE CARTER, B. S., Fellow in Technical Chemistry.

VICTOR CLYDE EDWARDS, A. B., Fellow in Chemistry.

LELAND BROWN RHODES, B. S., Fellow in Organic Chemistry.

AULEY MCRAE CROUCH, Assistant in Anatomy.

HENRY ROLAND TOTTEN, A. B., Assistant in Botany.

FRANK DAVIES CONROY, Assistant in Chemistry.

VICTOR ALDINE COULTER, B. S., Assistant in Chemistry.

ARTHUR JAMES FLUME, Assistant in Chemistry.

WILLIAM AUGUSTUS RUDISILL, B. S., Assistant in Chemistry.

JACKSON TOWNSEND, A. B., Assistant in Chemistry.

JOHN WESLEY MCIVER, S. B., Assistant in Electrical Engineering.

JOHN MARCELLUS STEADMAN, JR., A. M., Assistant in English.

ELDRED OSCAR RANDOLPH, A. B., Assistant in Geology.

HENRY FRANK STARR, Assistant in Histology.

JOHN ROBERT GENTRY, Assistant in the Library.

JESSE FORBES PUGH, Assistant in the Library.

WILLIAM RAYMOND TAYLOR, Assistant in the Library.

FRANK HODGES COOPER, Assistant in the Library.

JAMES EUGENE HOLMES, Assistant in the Library.

ADOLPHUS BART GREENWOOD, A. B., Assistant in Pharmacology.

James Blaine Scarborough, A. B., Fellow in Mathematics.
Hubert Walter Collins, Assistant in Surveying.
Edwin Fuller Conrad, Assistant in Physics.
Bascom Lee Field, Assistant in Physics.
William Renny Harding, Assistant in Physics.

OTHER OFFICERS

Walter Dallam Toy, M. A., Secretary of the Faculty.
Louis Round Wilson, Ph. D., Librarian.
Nan Spotswood Strudwick, B. L. S., Assistant Librarian.
Louise Richardson, A. B., Assistant Librarian.
Robert Baker Lawson, M. D., Director of the Gymnasium.
William Pell Taylor, Assistant in the Gymnasium.
Carl Duffy Taylor, Assistant in the Gymnasium.
Julius Algernon Warren, Treasurer and Bursar.
Edgar Ralph Rankin, A. B., Secretary of the North Carolina Debating Union.
Charles Thomas Woollen, Proctor.
Thomas James Wilson, Jr., Ph. D., Registrar.
William Walter Rankin, A. M., Recorder of Absences.
Frank Porter Graham, A. B., General Secretary of the Young Men's Christian Association.

STANDING COMMITTEES OF THE FACULTY

The President is a member *ex-officio* of all committees.

Executive. Acting President Graham; Professors Herty, Patterson, Stacy, Bain.

Auditing. Professors Cain, Toy.

Athletics. Professors Herty, Mangum, Henderson, Winston, Howell.

Catalogue. Professors Howe, Bain, Daggett.

Commons. Professors Toy, McKie, Wheeler.

Library. Professors Raper, Coker, Royster, Dey.

Publications. Professors Royster, Hamilton, L. R. Wilson. Coker, Walker.

University Magazine. Professors Cobb, Bain, Booker.

Public Lectures. Professors Henderson, Bain, McGehee, MacNider, Coker.

Debates. Professors H. H. Williams, Raper, Bernard.

Self-Help. Professors Stacy, Hickerson, Bell.

University Press Association. Professor Royster.

University Sermons. Professors Toy, Raper, McKie.

Alumni Organizations. Professors Bernard, T. J. Wilson, Patterson; Mr. E. R. Rankin.

Graduate School. Acting President Graham; Professors Raper, Chase, Wagstaff.

Entrance Certificates. Professors Walker, Hamilton, Royster, Hickerson, Daggett.

Schedules. Professors T. J. Wilson, Stacy.

Library Appropriations. Acting President Graham; Professors Raper, H. V. Wilson.

Courses of Study. Professors Stacy, Patterson, Bain, Howe.

Commencement Program. Acting President Graham; Professors Pratt, Henderson, Howe, Hamilton.

McNair Lectures. Acting President Graham; Professors Herty, Coker, Henderson, H. H. Williams.

Absences. Professors Stacy, T. J. Wilson; Mr. W. W. Rankin.

Advanced Standing. Professors T. J. Wilson, Howe, Chase, Daggett.

University Extension. Acting President Graham; Professors L. R. Wilson, Stacy, Patterson, Walker, Raper, Noble, Cobb, Chase.

Entrance Conditions. Professors Bain, Daggett.

Grounds and Buildings. Professors Coker, Howe, Cobb.

Chapel. Professors Patterson, Stacy, Bell.

Advisers. Professor Stacy.

Curriculum. Professors Howe, Chase, Coker, Dey, Stacy.

PART TWO

THE COLLEGE OF LIBERAL ARTS
THE SCHOOL OF APPLIED SCIENCE
THE SCHOOL OF EDUCATION
THE GRADUATE SCHOOL

The College of Liberal Arts

There are three courses of instruction outlined in The College of Liberal Arts. The object of these courses is to provide a general, well-rounded, liberal education. The first two years of each allow but little election of studies. Beginning with the Junior year the election is wider, and a student can devote himself, to a large extent, to such special lines of study as he may prefer, although there are certain general restrictions designed to guard against too narrow a specialization. The first course, requiring both Greek and Latin, corresponds to the old classical course. The second course is a combination of ancient and modern languages and science. The third course is largely scientific. All of these courses lead to the one degree of Bachelor of Arts, and they are so balanced as to make the work equally difficult and worthy.

ADMISSION

Admission Into the Freshman Class

Candidates for admission into the Freshman Class are received by examination or by certificates from accredited schools.

Entrance examinations are held in September. Arrangements have been made with certain schools in the State whereby examinations for admission may be held in May, also, at the schools. The University will accept the uniform entrance examination papers of the Association of Colleges and Preparatory Schools of the Southern States, provided such papers are properly vouched for and sent sealed to the University for grading. Candidates for admission by examination must report at 9 A. M., *Monday, September 7, 1914,* to the Registrar, who will appoint time and place for examination.

Students who present certificates of work accomplished at preparatory schools and colleges may be admitted without examination, provided the certificates are approved. The right to examine, however, is reserved, when such a course is deemed necessary. Certificates must be made out on the printed forms furnished on application to the Registrar, and should be sent in

as early as possible in the summer vacation. They must be submitted for approval to the Committee on Entrance Certificates in the Alumni Building during the period of registration (*September 7, 8, 9, 1914*).

Subjects Accepted for Entrance

The complete list of subjects accepted for entrance is as follows:

*English *a, b, c,*	3.	units
History *a, b, c,*	3.	units
Mathematics *a, b, c, d,*	3.5	units
Greek *a, b, c,*	3.	units
Latin *a, b, c, d, c,*	4.7	units
French *a, b,*	3.	units
German *a, b,*	3.	units
Spanish,	2.	units
Botany,	1.	unit
Chemistry,	1.	unit
Physics,	1.	unit
Zoology,	1.	unit
Drawing,	1.	unit
Civics,	.5	unit
Physiography	.5	unit
Physiology,	.5	unit

It will be noticed that each subject has a valuation by units. A unit means a definite amount of a subject satisfactorily completed in a reasonable length of time. For example, one unit in History means the satisfactory completion of a standard text book in English or United States History in a period of study continuing through an entire High School session; one-half unit in Solid Geometry means the completion of the four books of Solid Geometry in about one-half a session; the fourteen units mentioned below correspond to the four years of work in a good High School.

Unconditioned entrance to the undergraduate departments of the University requires a total of 14 units selected from the list above. A candidate, however, who desires to pursue any one of the regular courses leading to a Bachelor's degree must make his selection from the list of accepted subjects ac-

*For specific requirements in each of the subjects in this list, see page 34.

cord with the course to be pursued after entrance. Thus, the undergraduate course requiring Greek, Latin, Mathematics, and English necessitates the selection on the part of the candidate of a specified number of units in each of these branches (see below). The same is true, also, of entrance to all other courses.

The following tables indicate the requirements for entrance to each of the three courses leading to the degree of Bachelor of Arts (see page 39).

For entrance to group 1:

English *a, b,* and *c,*	3.	units
History *a* or *b,*	2.	units
Mathematics *a, b,* and *c,*	3.	units
Greek *a* and *b,*	2.	units
Latin *a, b, c,* and *d,*	3.7	units
Elective	.3	unit

For entrance to group 2:

English *a, b,* and *c,*	3.	units
History *a* or *b,*	2.	units
Mathematics *a, b,* and *c,*	3.	units
Latin *a, b, c,* and *d,*	3.7	units
French *a* or German *a,*	2.	units
Elective	.3	unit

For entrance to group 3:

English *a, b,* and *c,*	3.	units
History *a* or *b,*	2.	units
Mathematics *a, b,* and *c,*	3.	units
French *a,*	2.	units
German *a,*	2.	units
Science	1.	unit
Elective	1.	unit

At the discretion of the Committee on Entrance Certificates candidates may be admitted with conditions, provided the total number of units offered does not fall below the minimum of 12 units, and provided the conditions are of such nature that, in the judgment of the Committee, they may be removed according to the regulations given in the next paragraph. The Committee has the discretionary power to admit certain candidates

whose credits fall below 12 units, if, in the opinion of the Committee, the maturity of the candidate, who must be at least twenty-one years of age, justifies such action. Candidates thus admitted will be classed as special students.

Entrance conditions in any subject must be made up by September of the following year. A student who fails to comply with this regulation will not be allowed to register for any course in his Sophomore year.

The requirements in each of the subjects accepted for entrance are as follows:

ENGLISH: (1913-1915) (*a*) Grammar and Rhetoric 1. unit
(*b*) Reading and Practice ..... 1. unit
Two from each of the following groups:—

A. 1. Selections from the *Old Testament* (the chief narrative episodes in *Genesis, Exodus, Joshua, Judges, Samuel, Kings,* and *Daniel,* and the books of *Ruth* and *Esther*); 2. the *Odyssey,* (English translation), (Books I, II, III, IV, V, XV, XVI, XVII may be omitted); 3. the *Iliad,* (English translation), (Books XI, XIII, XIV, XV, XVII, XXI may be omitted); 4. Virgil's *Aeneid* (English translation).

A unit from any other group may be substituted for any unit in this group.

B. 1. Shakespeare's *The Merchant of Venice; 2. A Midsummer Night's Dream; 3. As You Like it; 4. Twelfth Night; 5. Henry the Fifth; 6. Julius Caesar.*

C. 1. Defoe's *Robinson Crusoe,* (Part I); 2. Goldsmith's *The Vicar of Wakefield;* 3. either Scott's *Ivanhoe* or *Quentin Durward;* 4. Hawthorne's *The House of Seven Gables;* 5. either Dickens's *David Copperfield* or *A Tale of Two Cities;* 6. Thackeray's *Henry Esmond;* 7. Mrs. Gaskell's *Cranford;* 8. George Eliot's *Silas Marner;* 9. Stevenson's *Treasure Island.*

D. 1. Bunyan's *The Pilgrim's Progress,* (Part I); 2. *The Sir Roger de Coverley Papers* in *The Spectator;* 3. Franklin's *Autobiography;* 4. Irving's *Sketch Book;* 5. Macaulay's Essays on *Lord Clive* and *Warren Hastings;* 6. Thackeray's *English Humorists;* 7. Selections from Lincoln (including at least the two Inaugurals, the Speeches in Independence Hall and at Gettysburg, the last public Address, and Letter to Horace Greeley) along with a brief memoir or estimate; 8. Parkman's *The Oregon Trail;* 9. Either Thoreau's Walden, or Huxley's *Autobiography* and selections from *Lay Sermons,* including the addresses on *Improving*

Natural Knowledge, A Liberal Education, and *A Piece of Chalk;* 10. Stevenson's *An Inland Voyage* and *Travels with a Donkey.*

E. 1. Palgrave's *Golden Treasury,* (First Series), Books II and III with especial attention to Dryden, Collins, Gray, Cowper, and Burns; 2. Gray's *An Elegy in a Country Churchyard* and Goldsmith's *The Deserted Village;* 3. Coleridge's *The Rime of the Ancient Mariner* and Lowell's *The Vision of Sir Launfal;* 4. Scott's *The Lady of the Lake;* 5. Byron's *Childe Harold,* Canto IV, and *The Prisoner of Chillon;* 6. Palgrave's *Golden Treasury* (First Series), Book IV, with especial attention to Wordsworth, Keats, and Shelley; 7. Poe's *The Raven,* Longfellow's *The Courtship of Miles Standish,* and Whittier's *Snow-bound;* 8. Macaulay's *Lays of Ancient Rome* and Arnold's *Sohrab and Rustum;* 9. Tennyson's *Gareth and Lynette, Lancelot and Elaine,* and *The Passing of Arthur;* 10. Browning's *Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Home Thoughts from Abroad, Home Thoughts from the Sea, Incident of the French Camp, Hervé Riel, Pheidippides, My Last Duchess, Up at a Villa—Down in the City.*

The candidate is expected to have sufficient knowledge of these books to enable him to answer general questions on their substance. The form of the examination will be the composition of paragraphs on a number of topics connected with the work. The ability of the candidate to express his ideas in clear, accurate English is a main consideration. No applicant should present himself who is notably deficient in spelling, grammar, or paragraphing.

(*c*) Study and Practice ..... 1. unit

Shakespeare's *Macbeth;* Milton's *L'Allegro, Il Penseroso,* and *Comus;* Burke's *Speech on Conciliation with America,* or Washington's *Farewell Address* and Webster's *First Bunker Hill Oration;* Macaulay's *Life of Johnson,* or Carlyle's *Essay on Burns.*

The questions on these books will be on subject matter and structure.

HISTORY: (*a*) The histories of the United States, Greece, and Rome, as outlined in the best text books for high schools ..... 2. units

(*b*) The histories of the United States and England as outlined in the best text books for high schools, 2. units

(*c*) Mediæval History ..... 1. unit

MATHEMATICS: (*a*) Algebra ..... 1.5 units

The whole of a high school algebra including quadratic equations, binomial theorem, and progressions.

(*b*) The whole of Plane Geometry..... 1. unit

(*c*) The whole of Solid Geometry..... .5 unit

(*d*) Trigonometry ..... .5 unit

Plane trigonometry and spherical trigonometry through right triangles.

GREEK: (*a*) Grammar and Composition..... 1. unit

Acquaintance with the more usual forms and constructions; simple narrative in English, based upon Xenophon's Anabasis, to be translated into Greek.

(*b*) Xenophon ..... 1. unit

The first four books of the Anabasis.

(*c*) Homer ..... 1. unit

The first three books of the Iliad, (omitting II., 494—end), with study of Homeric forms, constructions, and prosody.

LATIN: (*a*) Grammar and Composition ..... 1. unit

Forms, syntax, and prosody; simple narrative in English, based upon the prose read, to be translated into Latin.

(*b*) Cæsar ..... 1. unit

The first four books of the Gallic War.

(*c*) Cicero ..... .7 unit

The four orations against Catiline.

(*d*) Vergil ..... 1. unit

The first six books of the Æneid, study of hexameter verse.

(*e*) Cornelius Nepos ..... 1. unit

The first fifteen lives.

FRENCH: (*a*) Elementary ..... 2. units

The forms and uses of the various parts of speech, including irregular verbs; translation of 250 or more pages of easy prose into idiomatic English; translation of simple English sentences into French; pronunciation.

(*b*) Intermediate ..... 1. unit

Translation of 400 or more pages of French of ordinary difficulty.

GERMAN: (*a*) Elementary ..... 2. units

Inflection, including the most common irregular verbs; the ordinary laws of German syntax; translation of 200 or more pages of easy German into idiomatic English; translation of simple English sentences, based upon passages read, into German.

(*b*) Intermediate ..... 1. unit

Translation of 400 or more pages of German of ordinary difficulty.

SPANISH: Elementary ..... 2. units

Inflection, including the most common irregular verbs; ordinary laws of syntax; translation of 250 pages or more of easy Spanish into idiomatic English; translation of simple English sentences, based upon the passages read, into Spanish.

BOTANY: ..... 1. unit

A course such as is contained in any standard text book; laboratory work.

CHEMISTRY: ..... 1. unit

A course such as is contained in any standard text book; laboratory work.

PHYSICS: ..... 1. unit

A course such as is contained in Millikan and Gale's Physics or Carhart and Chute's High School Physics; laboratory work such as is outlined in Millikan and Gale's Physics.

PHYSIOGRAPHY: ..... .5 unit

A course such as is contained in any standard text book.

PHYSIOLOGY: ..... .5 unit
A course such as is contained in any standard text book.

ZOOLOGY: ..... 1. unit
A year's course such as is contained in any standard text book.

CIVICS: ..... .5 unit
A course such as is contained in any standard text book.

DRAWING: ..... 1. unit
A year's work, including simple geometrical plane and solid figures, simple pieces of machinery; elementary rules of perspective, light, and shade, as applied in free-hand sketching.

Admission to Advanced Standing

A candidate for advanced standing may be admitted to the Sophomore, Junior, or Senior Class, with or without complete examination. He is subject not only to the examinations required of candidates for admission into the Freshman Class, but to special examinations both in all the required studies already pursued by the class which he desires to enter, and in as many elective studies as would have been required of him as a member of that class. When satisfied with the apparent fitness of the candidate, the examining committee may, in spite of his deficiences in some studies, admit him to an advanced class; but a candidate so admitted is not recommended for the degree until the deficiencies are made good. The examining committee may accept, also, with proper restrictions, the official report of work satisfactorily completed at a college or university of good standing in place of an examination upon such previous work.

A candidate for advanced standing should present himself for examination on the same days and at the same hours as candidates for admission into the Freshman Class.

Curriculum

COURSES LEADING TO THE DEGREE OF BACHELOR OF ARTS

In order to be recommended for the degree of Bachelor of Arts, the student must have passed satisfactory examinations in all the studies required in one of the groups prescribed for the Freshman and Sophomore years, and in a number of elective studies during the Junior and Senior years sufficient to amount to an average of fifteen hours of lectures or recitations a week for each of these years. Students who expect at some time to carry out investigation in any science or scientific profession, such as medicine or engineering, are earnestly recommended to enter upon their Senior year with a reading knowledge of German and French. Class work in these subjects should have included at least German 1 and 2 and French 1.

The group of studies selected for the Freshman and Sophomore years must correspond to the group of subjects offered for entrance.

Freshman Year

Group 1.	Group 2.	Group 3.
English 1 (3)*	English 1 (3)	English 1 (3)
Mathematics 1 (4)	Mathematics 1 (4)	Mathematics 1 (4)
Greek 1 (4)	Select one: Greek 1 (4) / Latin 1 (4)	German 1 (3)
Latin 1 (4)	Select one: German 1 (3) / French 1 (3)	French 1 (3)
Pub. Speaking 1 (1)	History 1 (3)	History 1 (3)
	Pub. Speaking 1 (1)	Pub. Speaking 1 (1)

Sophomore Year

Group 1.	Group 2.	Group 3.
English 2 (3)	English 2 (3)	English 2 (3)
Select one: Greek 2 (3) / Latin 2 (3)	Select two: Greek 2 (3) / Latin 2 (3) / German 1 (3) / French 1 (3) / German 2 (3) / French 2 (3)	Math. 2 (3)
Select one: Greek 2 (3) / Latin 2 (3) / German 1 (3) / French 1 (3)		Chem. 1 (3)
Select one: Math. 2 (3) / Chem. 1 (3) / Physics 1 (3)	Select one: Math. 2 (3) / Physics 1 (3)	Physics 1 (3)
Elective (3)	Elective (3)	Elective (3)

*Numerals in parentheses indicate the number of hours a week.

SOPHOMORE ELECTIVES: Greek 2 (3), Latin 2 (3), German 1 (3), French 1 (3), History 3 (3), History 8 (3), Botany 1 (3), Chemistry 1 (3), Geology 1 (3), Mathematics 2 (3), Physics 1 (3), Zoology 1 (3).

The selection made must in each case be submitted to Professor BAIN for approval.

Junior Year

ELECTIVE STUDIES amounting to fifteen hours a week, of which at least one study must be taken from each of the following groups, A, B, and C:

A

English 3 (3), 4 (2), 5 (3), 6 (3), 8 (2), 9 (2), 10 (3), 11 (3), 12 (2), 14 (3), 16 (2).
Public Speaking 2 (2), 3 (2), 4 (2).
Greek 2 (3), 4 (2), 5 (1), 6 (2), 7 (3), 9 (1), 10 (1½), 14A (1), 14 B (1), 15 (2), 16 (1), 19 (2).
Latin 2 (3), 4 (2), 5(2), 6 (2), 7 (1), 7A (1), 8 (1), 9 (2), 10 (2), 13 (2), 15 (2), 16 (1).
German 2A (3), 2B (3), 3 (2), 4 (3), 5 (3), 6 (3), 7A (2), 7B (2).
French 2 (3), 3 (3), 4A (3), 4B (3), 5 (3).
Spanish 1 (3), 2 (3), 3 (2).
Italian 1 (3).

B

History 2 (2), 3 (3), 4 (2), 5 (2), 6 (1), 7 (3), 8 (3), 9 (2), 11 (1), 12A (1), 12B (1), 15 (2).
Philosophy 1 (3), 2 (2), 3 (2), 4 (3), 6 (3).
Economics 1 (3), 4 (3), 5 (2).
Education 1 and 2 (3), 3 (1½), 4 (1½), 5 (1), 6 (1), 9 (1½), 10 (1½), 14 (2), 17 (3), 18 (3).

C

Mathematics 2 (3), 3 (3), 3A (2), 3B (2), 3D (1), 3E (1), 4 (3), 5 (3), 14 (2).
Physics 1 (3), 2 (2), 4 (2), 5 (2), 6 (2).
Chemistry 1 (3), 2 (3), 3 (2), 4 (3), 5 (3), 7 (3), 16 (1½).
Zoology 1 (3), 2 (3), 4 (5).
Botany 1 (3), 2 (3), 3 (3).
Geology 1 (3), 2 (3), 3 (3), 4 (3), 5 (3), 8 (3), 8A (1), 13 (1½).
Electrical Engineering 1 (3), 1A (3), 9A (1).

The selection made must in each case be submitted to Professor Patterson for approval.

Senior Year

ELECTIVE STUDIES amounting to fifteen hours a week, subject to the condition stated above for the Junior Year. In addition to the courses named for Junior Year the following courses are also open to Seniors:

A

English 7 (2).
Greek 17 (1).
Latin 14 (1).

B

History 10 (2).
Economics 2 (2), 3 (2).
Education 7 (3), 8 (1½), 11 (2), 15 (2), 16 (2).
Philosophy 7 (1½).
Law (3).

C

Mathematics 6 (3), 7 (2), 7A (3), 8 (3), 10 (4), 11 (2), 13 (3), 16 (2).
Chemistry 5A (2), 6 (1), 7A (2), 7B (2), 8 (5), 17 (3).
Geology 6 (3), 7 (3), 12 (1).
Electrical Engineering 2A (2½), 2B (1½), 3 (3), 4 (2), 5 (1½), 6 (1), 7 (1), 9B (1).
Anatomy 1 (3).
Physiology 1 (1½).

The selection made must in each case be submitted to Professor HOWE for approval.

Courses of Instruction

DEPARTMENT OF BOTANY

William Chambers Coker, Ph. D., *Professor of Botany.*

Henry Roland Totten, A. B., *Assistant in Botany.*

[For description of Biological Laboratories, see page 227.]

1. General Botany: an introduction to the structure and classification of plants; lectures with laboratory work. Sophomore, Junior, and Senior elective. *Both terms, three hours.* Professor Coker and Mr. Totten.

2. Physiology: a general course in plant physiology; lectures with laboratory and field experiments. Junior and Senior elective. *Both terms, three hours.* Professor Coker and Mr. Totten.

3. Special Morphology of the Algæ and Fungi, with attention to the culture of lower fungi, and the identification of mushrooms; lectures with laboratory and field work. Junior and Senior elective. *Both terms, three hours.* Professor Coker and Mr. Totten.

For Course 4, see Graduate School.

DEPARTMENT OF CHEMISTRY

Charles Holmes Herty, Ph. D., *Smith Professor of General and Industrial Chemistry.*

*Francis Preston Venable, Ph. D., D. Sc., LL. D., *Lecturer on the History of Chemistry.*

Alvin Sawyer Wheeler, Ph. D., *Professor of Organic Chemistry.*

James Munsie Bell, Ph. D., *Professor of Physical Chemistry.*

William Lewis Jeffries, A. M., *Instructor in Chemistry.*

James Talmage Dobbins, A. M., *Le Doux Fellow in Chemistry.*

Carnie Blake Carter, B. S., *Fellow in Technical Chemistry.*

Victor Clyde Edwards, A. B., *Fellow in Chemistry.*

*Absent on leave 1913-1914.

Leland Brown Rhodes, B. S., *Fellow in Organic Chemistry.*
Frank Davies Conroy, *Assistant in Chemistry.*
Victor Aldine Coulter, B. S., *Assistant in Chemistry.*
Arthur James Flume, *Assistant in Chemistry.*
William Augustus Rudisill, B. S., *Assistant in Chemistry.*
Jackson Townsend, A. B., *Assistant in Chemistry.*

[For description of Chemical Laboratories, see page 225.]

1. General Descriptive Chemistry: a study of the elements and their compounds, including an introduction to Organic Chemistry; lectures with laboratory work. Required of Sophomores in Group 3, elective in Groups 1 and 2. *Both terms, three hours.* Professor Herty, and Messrs. Jeffries, Rudisill, and Townsend.
Laboratory fee, $1.25 a term.

2. Technical Chemistry: (*a*) Industrial and Agricultural Chemistry; glass-making, acids, alkalies, phosphates, fertilizers, foods, clothing, hygiene, etc. (*b*) Metallurgy: mining, treatment of ores, smelting, chlorination, fuel, building materials, etc. Junior and Senior elective; prerequisite, Chemistry 1. *Both terms, three hours.* Professor Herty.

3. Qualitative Analysis: laboratory work with lectures. Prerequisite, Chemistry 1. Junior and Senior elective. *Both terms, two hours.* Professor Wheeler and Mr. Flume.
Laboratory fee, $5.00 a term.

4. Quantitative Analysis: laboratory work, lectures, and stoichiometric exercises; a grounding in analytical methods. Junior and Senior elective; prerequisite, Chemistry 1 and 3 or may be taken with 3. *Both terms, three hours.* Professor Bell.
Laboratory fee, $5.00 a term.

5. Organic Chemistry: Junior and Senior elective; prerequisite, Chemistry 1 and 3. *Both terms, three hours.* Professor Wheeler.
Laboratory fee, $4.00 a term.

5A. Organic Chemistry: laboratory work chiefly. This course is designed to give further practice in dealing with organic substances. Senior elective; prerequisite, Chemistry 5. *Both terms, two hours.* Professor WHEELER.
Laboratory fee, $6.00 a term.

6. History of Chemistry; Senior elective; prerequisite, Chemistry 5 and 7. *Spring term, two hours.* President VENABLE.

7. Elementary Physical Chemistry: Junior and Senior elective: prerequisite, Chemistry 3 and 4. *Both terms, three hours.* Professor BELL.
Laboratory fee, $2.00 a term.

7A. Physical Chemistry: lectures and text books, with laboratory work. Senior elective; prerequisite, Chemistry 7. *Both terms, two hours.* Professor BELL.
Laboratory fee, $2.00 a term.

7B. Electro-Chemistry: theory and application of electricity to chemical processes. Senior elective; prerequisite, Chemistry 4. *Both terms, two hours.* Professor BELL.
Laboratory fee, $2.00 a term.

8. Quantitative Analysis: laboratory work; gas analysis and extension of course 4 along technical lines; research. Senior elective; prerequisite, Chemistry 1, 3, and 4. *Both terms, five hours.* Professor HERTY.
Laboratory fee, $10.00 a term.

16. Inorganic Chemistry: a detailed study of the reactions of the elements and their compounds. Lectures and text book. Junior and Senior elective; prerequisite, Chemistry 4. *Spring term, three hours.* Professor HERTY.

17. Quantitative Analysis: laboratory work. Extension of course 4 along technical lines. Senior elective: prerequisite, Chemistry 4. *Both terms, three hours.* Professor HERTY.
Laboratory fee, $5.00 a term.

The Journal Club meets fortnightly. The current journals, American, English, German, and French, both the purely scientific and the technical, are reviewed by the students and instructors. Attendance is expected of students in advanced courses.

For courses 3A and 4A, see School of Applied Science.

For courses 9 and 10, see School of Medicine and School of Pharmacy.

For courses 11, 12, 13, 14, and 15, see Graduate School.

DEPARTMENT OF ECONOMICS AND FINANCE

CHARLES LEE RAPER, Ph. D., *Professor of Economics.*

1. General Economics: A general study of the principles which are involved in the production, distribution, and consumption of wealth, and in the relation of wealth to welfare; a special study of labor, land, capital, business management, and the state, as factors in the production and distribution of wealth. Raper's *Principles of Wealth and Welfare,* and Seligman's *Principles of Economics.* Junior and Senior elective. *Both terms, three hours.* Professor RAPER.

2. Public Finance: A general study of the principles which are involved in the revenues and expenditures of the state, and in the relation of the state to the industries of its citizens; a special study of taxation and the tariff. Lectures, readings, and reports. Adams' *The Science of Finance.* Senior elective. *Both terms, two hours.* Professor RAPER.

Given in alternate years; to be given in 1914-1915.

3. Economic Institutions and Thought in England and the United States: A general study, largely from the historical point of view, of the economic institutions and the systems of economic thought in England and the United States; a special study of socialism. Lectures, readings, and reports. Cheyney's *Industrial and Social History of England,* Brooks' *The Social Unrest,* Spargo's *Socialism,* and the *Communist Manifesto* (Marx and Engels). Senior elective. *Both terms, two hours.* Professor RAPER.

4. Money, Banking, and Insurance: (*a*) A general study of the principles, functions, and forms of money and banking; a special study of current monetary problems. Lectures, readings, and reports. Kinley's *Money,* Dunbar's *Theory and History of Banking,* (2nd Ed.), and Jones' *Economic Crises.* (*b*) A general study of the principles and methods of insurance; a special study of the regulation of insurance by the state. Lectures and readings. Junior and Senior elective. *Both terms, three hours.* Professor RAPER.

5. Transportation and Labor: (*a*) A general study, from the historical and critical points of view, of railway transportation in such representative countries as Great Britain, France, Italy, Germany, and the United States; the general conditions of traffic, the passenger service and rates, the freight service and rates, and the ideals and machinery of the state's relation receive special consideration. Lectures, readings, and reports. Raper's *Railway Transportation: a History of its Economics and of its Relation to the State.* (*b*) Labor as an agent in the production of wealth; wages; some wages problems, as, for instance, woman and child labor, immigration, sweating system, and poverty; some of the solutions of these problems, as, for instance, strikes, boycotts, trades unions, conciliation and arbitration, profit-sharing, co-operation, industrial education, and the factory acts; the relation of the state to wages problems. Adams and Sumner's *Labor Problems.* Junior and Senior elective. *Both terms, two hours.*

Given in alternate years; to be omitted in 1914-1915.

A certificate is granted to the student who has completed, with credit, courses 1-5.

EDUCATION

The announcement of courses in Education and in Library Administration will be found under THE SCHOOL OF EDUCATION.

DEPARTMENT OF ELECTRICAL ENGINEERING

PARKER HAYWARD DAGGETT, S. B., *Professor of Electrical Engineering.*

JOHN WESLEY MCIVER, S. B., *Assistant in Electrical Engineering.*

[For description of Electrical Engineering Laboratories, see p. 223.]

1. The Elements of Electrical Engineering: a general survey of the fundamental principles of electrical machinery and apparatus. This course is intended to lay a solid foundation in preparation for the more advanced and specialized courses in the department. The work begins with a thorough study of electric and magnetic circuits. The construction and operating features of direct current machines are then considered, each machine being treated as a combination of these two circuits. Brief consideration is then devoted to batteries, lamps, and the systems of power transmission. In the second term the elementary theory of alternating currents is begun, and the method of handling the simpler problems in alternating current circuits is studied. The laboratory work comprises a practical study of circuits and machines and follows the lecture work closely. Text: Christie's *Electrical Engineering.* Junior and Senior elective. Prerequisites, Mathematics 2 and Physics 1 and 4. *Both terms, three hours.* Professor DAGGETT, and Mr. MCIVER.

Laboratory fee, $3.00 a term.

1A. Generation, Transmission and Utilization of Electrical Energy. This course is designed primarily for students desiring a general practical knowledge of electrical apparatus, and aims to give them a knowledge of the principles and operating features of dynamos, transformers, storage batteries, lamps, measuring instruments, and the systems of electrical power transmission. Text book: Timbie's *The Elements of Electricity,* and Clewell's *Laboratory Manual of Direct and Alternating Currents.* Lectures, recitations, problems and laboratory work. Junior and Senior elective. Pre-

requisites, Mathematics 2 and Physics 1. *Both terms, three hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $3.00 a term.

2A. Alternating Currents. The work of this course begins with a review of the electric, magnetic and dielectric circuits, and of the elementary theory of alternating currents. A thorough study is then made of the various methods of solving the more complicated problems of single and polyphase circuits. Considerable time is devoted to the study of the effects of iron cores in alternating current circuits and to the analysis of distorted wave forms. This leads to the study of the transformer which serves as a typical example of the fundamental principles previously developed. Throughout the course extensive use is made of the calculus; at the same time, the importance of a clear physical conception of the various phenomena is emphasized, and graphical solutions by means of vector diagrams are freely employed as a means of visualizing problems. The laboratory work comprises mainly the study of distorted wave forms of current and e. m. f., polyphase circuits, and transformer tests. Text book: Jacksons' *Alternating Currents and Alternating Current Machinery.* Senior elective. Prerequisites, Mathematics 4 and Electrical Engineering 2A. *Fall term, five hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $5.00.

2B. Alternating Current Machinery: a continuation of course 2A, consisting of a thorough study, from the theoretical and experimental points of view, mainly of the following machines; synchronous alternators and motors; induction motors; induction generators; synchronous converters; series alternating current commutator motors. The theory of each machine is developed from the standpoint of the fundamental laws of the electric and magnetic circuits. From the design constants of the machines in the laboratory is made a predetermination of the performance of each machine, and the laboratory work consists mainly in checking and com-

paring the actual performance of the machines with the predetermined characteristics. A study is also made of the commercial methods of testing the various machines. Senior elective. Prerequisite, Electrical Engineering 2A. *Spring term, three hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $5.00.

3. Electrical Measurements and Testing. This course is mainly a laboratory course in general testing. The work in the laboratory consists of the following tests: calibration of instruments; precise measurements of resistance, inductance and capacity: parallel operation of direct current generators, transformers and alternators; efficiency tests; pumping back methods of loading, including a heat run on a transformer; testing of dielectrics, and miscellaneous tests on storage batteries, potential regulators and frequency changers. About six weeks of the Spring term are devoted to lectures on electro-chemical processes by Professor BELL, supplemented by laboratory work in the construction of standard cells, conductivity measurements and the manufacture of calcium carbide, silicon carbide and the reduction of aluminum. Laboratory Manual: Karapetoff's *Experimental Electrical Engineering.* Senior elective. Prerequisite, Electrical Engineering 1. *Both terms, three hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $5.00 a term.

4. Dynamo Design. An elementary course in the principles of the design of standard electrical apparatus. The aim of the course is not merely to produce complete designs and drawings based on purely empirical formulæ, which have but little significance to the student, but rather to train the student in rational methods of design, based on the same fundamental principles used in his other work. Emphasis is placed on logical analysis of the various problems, both from a theoretical point of view and in the light of commercial limi-

tations and economic conditions involved in manufacturing. Texts: Gray's *Electric Machine Design* and Hobart's *Dynamo Design*. Senior elective. Open to students who take or have taken Electrical Engineering 2A and 2B. *Both terms, two hours.* Professor DAGGETT.

5. Illuminating Engineering. The work of this course begins with a study of the physics of light, including an experimental lecture by Professor Patterson, followed by three lectures on the physiological and psychological aspects of the subject by Professors Manning and Chase. Considerable time is then devoted to the subject of photometry, after which a study is made of modern sources of artificial light. Finally are considered the principles of design of interior and exterior illumination, especial attention being devoted to the conservation of the eyesight, and the attainment of the highest efficiency consistent with the best artistic effect. Reference books: Barrow's *Light, Photometry and Illumination*, and Steinmetz' *Radiation, Light and Illumination*. Senior elective. Prerequisite, Electrical Engineering 1. *Fall term, three hours.* Professor DAGGETT.

Laboratory fee, $3.00.

6. Telephone and Telegraph Engineering. This course deals with the principles of the transmission of intelligence by telephone and telegraph, including a brief study of wireless telegraphy. The various parts of the telephone plant are outlined, together with a study of fault location, loading coils, inductive disturbances and composite lines. Lectures and problem work. Senior elective. Prerequisite, Electrical Engineering 1. *Spring term, two hours.* Professor DAGGETT.

7. Electric Power Transmission. A course of lectures and recitations on the design of long distance transmission lines. (*a*) The economic principles involved in the preliminary design and lay-out. (*b*) Electrical principles; line materials and constants; regulation; trans-

ient phenomena; insulation and lightning protection. (*c*) Mechanical design: sag of conductors; spans; poles and towers. Text: Still's *Overhead Electric Power Transmission.* Senior elective. Prerequisite, Electrical Engineering 2A. *Spring term, two hours.* Professor DAGGETT.

9A. Steam Machinery. A general elementary course in the construction, operation and use of the machinery of modern power plants, the main object of the course being to give the student a working knowledge of the apparatus in preparation for course 9B. Some of the subjects considered are the construction and operation of steam boilers; mechanical stokers; fuels and combustion; draft; feed pumps and feed water heaters; piping systems; construction and operation of the simple slide-valve engine; valves and valve-gears; indicating and governing; condensers; multiple-expansion engines; steam turbines. Text: Spangler, Greene and Marshall's *Elements of Steam Engineering.* Junior and Senior elective. Prerequisites, Drawing 1 and Physics 1. *Fall term, two hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $2.00.

9B. Electric Power Plants: a continuation of course 9A from the standpoint of the choice of machines and apparatus, and the layout of the plant as a whole. Considerable attention is devoted to the electrical control apparatus and switch-gear. A brief survey is made of the organization and management of power plants, including the questions of rates and relations to the public. The work will be covered by recitations on the text book, supplemented by lectures, and each student will be required to complete one original design. Text: Meyer's *Steam Power Plants.* Senior elective. Prerequisites, Physics 6 and Electrical Engineering 1 and 9A. *Spring term, two hours.* Professor DAGGETT.

For courses for Graduate Students, see Graduate School.

DEPARTMENT OF ENGLISH

JAMES FINCH ROYSTER, Ph. D., *Professor of English.*

EDWARD KIDDER GRAHAM, A. M., *Professor of English.*

EDWIN GREENLAW, Ph. D., *Professor of English.*

GEORGE MCFARLAND MCKIE, A. M., *Associate Professor of Public Speaking.*

JOHN MANNING BOOKER, Ph. D., *Associate Professor of English.*

GEORGE MARK SNEATH, A. M., *Instructor in English.*

JOHN MARCELLUS STEADMAN, JR., A. M., *Assistant in English*

1. Types of Literature: the short story, the novel, the essay; the lyric, the epic, the ballad, and the drama. Practical rhetoric and theme writing during the second term. This course lays the foundation for the student's later studies in both literature and composition. Required of Freshmen. *Both terms, three hours.* Professor ROYSTER, Associate Professor BOOKER, Mr. SNEATH, and Mr. STEADMAN.

2. First term: Rhetoric and Composition; preparation and criticism of daily and weekly themes. Second term: History of English Literature. Reports on assigned readings. Required of Sophomores. *Both terms, three hours.* Professors ROYSTER and GREENLAW, Associate Professor BOOKER, and Mr. SNEATH.

3. Advanced Composition: constant practice throughout the year in the various forms of prose discourse. Lectures and discussions. Junior and Senior elective; prerequisite, a grade of 80 in English 2. *Both terms, three hours.* Professor GRAHAM.

4. The English Novel. The development of prose fiction (romance, novel, short story) in England from the sixteenth century to the present time: stress will fall on the period from Richardson to Hardy. Attention will be paid to the development of the technique of the novel and the short story, and to the service of fiction

as an interpretation of life. Junior and Senior elective; open to Sophomores by special permission of the Department. *Both terms, two hours.* Professor GREENLAW.

This course alternates with English 12; to be given in 1914-1915.

5. The Elizabethan Drama. A brief study of the beginnings of the English drama, followed by an intensive study of the period from Lyly to the closing of the theatres. While particular attention is paid to Shakespeare, it is also the purpose of the course to study his work in connection with that of his contemporaries. Junior and Senior elective; open to Sophomores by special permission of the Department. *Both terms, three hours.* Professor GREENLAW.

6. Introductory course in Old English and Middle English. In the first term a careful study is made of Old English grammar and syntax; a large amount of easy Old English prose is read. Text: Bright's *Anglo Saxon Reader.* In the second term the grammatical work and the reading are carried on into the Middle English period, with special attention to Chaucer. Texts: Greenlaw's *Selections from Chaucer;* Emerson's *Middle English Reader.* The aim of the course is to acquaint the student with the main facts of the beginning and development of the English language. The language of the older periods is considered in its relation to present-day English; many points of confusion in Modern English, unexplained by the rules of logical grammar, are made clear. Junior and Senior elective; open to Sophomores by special permission of the Department. *Both terms, three hours.* Professor ROYSTER.

The attention of students electing this course is called to course 13 in the Department of Latin and to course 6 in the Department of German.

7. Advanced course in Old English and Middle English. The work of the first term continues the study of Old English grammar, particularly in its relation to that of the other Indo-European languages, and takes up the

reading of Old English poetry. A study of Chaucer's minor poems will be the basis of the work of the second term, 1915. Senior elective: prerequisite, English 6 or its equivalent. *Both terms, two hours.* Professor ROYSTER.

8. History of the English Language. This course supplements English 6. It will trace the growth of the English language from its beginnings in England until to-day. Junior and Senior elective. *Both terms, two hours.* Professor ROYSTER.

9. The Contemporary Drama. In this course the condition of the stage and the character of the plays in England from 1840 to the present day will be sketched. The lectures will deal particularly with the imitation and adaptation of French plays, the attempts to put into dramatic form problems of contemporary life and manners, the sociological and artistic tendencies of the modern drama, the manifestations of decadence, the influence of Ibsen, the recent German drama, the literary drama, and the present day outlook. A large number of representative modern dramas will be assigned for reading. Junior and Senior elective. *Both terms, two hours.* Professor ROYSTER.

10. American Literature. American Literature in the light of American history and culture. Special attention to the literature of New England (1825-1892), to Southern literature since the Civil War, and to the western humorists. Junior and Senior elective. *Both terms, three hours.* Associate Professor BOOKER.

11. English Literature in the Age of Elizabeth. A study of the types of literature, except the drama: the pastoral; the sonnets and other lyrical poetry; the epic; prose fiction (both short story and novel); the essay. The relations between English and Continental literature in the Renaissance. Junior and Senior elective. *Both terms, three hours.* Professor GREENLAW.

12. English Classicism. The influence of the classical literatures and criticism from Sidney to Johnson; the pseudo-classic theories of literature and their influence on poetry and the Restoration drama; Milton, Dryden, Pope, Johnson, and their contemporaries. Junior and Senior elective. *Both terms, two hours.* Professor GREENLAW.

This course alternates with English 4; to be omitted in 1914-1915.

14. Nineteenth Century Literature. (1799-1892.) Emphasis in the first term on Wordsworth, Byron, and Shelley; in the second on Arnold, Tennyson, and Browning. Junior and Senior elective; open to Sophomores by special permission of the Department. *Both terms, three hours.* Associate Professor BOOKER.

16. Journalism. Practice in the forms of journalistic composition. Junior and Senior elective. *Both terms, two hours.* Professor ROYSTER.

An honor certificate, carrying the recommendation of the Department, is granted a student who has completed with an average grade of not less than 85 courses 1, 2, 4 or 5, 6, 11 or 12; and 14.

Public Speaking

1. A course in declamation and in simple extempore speaking on subjects of current interest. The aim of this course is to correct faults in speech and to form the habit of simple, clear, direct speaking. Required of Freshmen. *Both terms, one hour.* Associate Professor MCKIE.

2. The Forms of Public Address: the argumentative speech, the commemorative address, the after dinner speech, the eulogy. Open to Sophomores who have attained a grade of 2 in English 1, and to Juniors and Seniors; prerequisite, Public Speaking 1. *Both terms, two hours.* Associate Professor MCKIE.

3. Debate: the preparation of briefs and forensics, and practice in oral debate. Junior and Senior elective; prerequisites, Public Speaking 1. *Both terms, two hours.* Associate Professor MCKIE.

4. Interpretative Speaking and Reading: a course designed to develop through vocal expression an appreciation of good literature, and an ability to interest others in the works of great writers. Open to Sophomores who have attained a grade of 2 in Public Speaking 1, and to Juniors and Seniors. *Both terms, two hours.* Associate Professor McKie.

DEPARTMENT OF GEOLOGY AND MINERALOGY

Collier Cobb, A. M., *Professor of Geology and Mineralogy.*

Joseph Hyde Pratt, Ph. D., *State Geologist and Professor of Economic Geology.*

John Eliphalet Smith, M. S., *Instructor in Geology.*

Eldred Oscar Randolph, A. B., *Assistant in Geology.*

[For description of Geological Laboratories, see page 228.]

1. Elementary Geology: lectures with field work; laboratory work on the common minerals and rocks. Sophomore, Junior, and Senior elective. *Both terms, three hours.* Professor Cobb and Mr. Randolph.

Laboratory fee, $1.00 for the fall term, $3.00 for the spring term.

2. Mineralogy: crystallography, physical and chemical properties of minerals, blowpipe analysis, determinations; lectures, laboratory, and field work; Dana's *Manual of Mineralogy* (Ford). Junior and Senior elective; prerequisite, Geology 1 and Chemistry 1. *Both terms, three hours.* Mr. Smith.

Laboratory fee, $5.00 a term.

3. General Critical Geology: lectures with field work; laboratory work on rocks and fossils; theses. Junior and Senior elective. *Both terms, three hours.* Professor Cobb.

Laboratory fee, $3.00 for the fall term, $5.00 for the spring term.

4. Economic Geology: ore deposits, coal, oil and gas, clays, building stone, cement materials, fertilizers, underground waters, etc.; occurrence, methods of exploitation, production, and conservation of mineral re-

sources; lectures, laboratory, and field work. Junior and Senior elective; prerequisite, Geology 1 and Chemistry 1. *Both terms, three hours.* Mr. SMITH.
Laboratory fee, $1.00 a term.

5. Petrography: rocks and rock minerals, optical mineralogy, crystallography, etc.; lectures, laboratory work, theses, and field work. Junior and Senior elective. *Both terms, three hours.* Mr. SMITH.
Laboratory fee, $3.00 a term.

6. Advanced field work and special research in Geology or Geography; problems and work adapted to the professional needs of the student. Students in this course are expected to keep Saturday open for field work. Senior elective; prerequisite, two courses in Geology. *Both terms, three hours.* Professor COBB.

7. Advanced course in Physiography. Senior elective; prerequisite, Geology 1 and Zoology 1 or Botany 1. *Both terms, three hours.* Professor COBB.
Laboratory fee, $2.00 a term.

8. Origin and Nature of Soils: field work, laboratory work, and theses. Students in this course are expected to keep Saturday open for field work. Junior and Senior elective; prerequisite, Geology 1 and 2, Chemistry 1 and 3, Botany 1. *Both terms, three hours.* Professor COBB.
Laboratory fee, $3.00 a term.

8A. Road Materials: rocks, sands, clays, asphalts, concrete, dust preventives, etc.; their properties and adaptations; laboratory and field work; prerequisite, Geology 1. *Both terms, one hour.* Mr. SMITH.
Laboratory fee, $1.00 a term.

11. Mineral and Ore Deposits: lectures supplemented by laboratory and field work; prerequisite, Geology 1 and 2 and Chemistry 3. *Twenty-four lectures (Spring term).* Professor PRATT.

12. Advanced Work in Mineralogy. Senior elective. *One hour.* Professor PRATT.

13. Advanced Geological Field Work and Special Research: studies in the Deep River and Wadesboro areas of the Triassic rocks; a brief examination of the Potomac, Eocene, Lafayette, and Columbia deposits. This course is given in the summer. It covers five weeks, of which one is spent in Chapel Hill with daily meetings, the remaining four weeks are devoted to field work. Students who take this course will be expected to devote all their time to it. Junior and Senior elective. *One term, three hours.* Professor COBB.

The Geological Seminary meets fortnightly for review and discussion of current geological literature, and for the presentation of original papers.

For course 9, see Graduate School.

For courses 10 and 10A, see School of Applied Science.

DEPARTMENT OF GERMANIC LANGUAGES

WALTER DALLAM TOY, M. A., *Professor of the Germanic Languages and Literatures.*

KENT JAMES BROWN, Ph. D., *Associate Professor of German.*

ORESTES PEARLE RHYNE, Ph. D., *Assistant Professor of German.*

A. Elementary Course: grammar: written and oral exercises; translation: sight reading. This course may be counted for entrance only. *Both terms, three hours.* Professor TOY, Associate Professor BROWN and Assistant Professor RHYNE.

B. Elementary Course: grammar, translation: sight reading. This course is required of students who are taking the Special Course Preparatory to Medicine. It is not elective with German A. *Both terms, three hours.* Assistant Professor RHYNE.

1. Translation, sight reading, composition, grammar. Required of Freshmen in Group 3, elective in Group 2; Sophomore elective. *Both terms, three hours.* Professor TOY and Associate Professor BROWN.

1A. Practice in writing and speaking German. Prerequisite, German 1. Sophomore elective. *Both terms, one hour.* Associate Professor BROWN.

2A. Schiller: Maria Stuart, Wilhelm Tell; Goethe: Egmont, Iphigenie auf Tauris; Lessing: Minna von Barnhelm. Sophomore elective in Group 2; Junior and Senior elective; prerequisite, German 1. *Both terms, three hours.* Assistant Professor RHYNE.

2B. Wide reading of modern German prose, with lectures on the literature in the nineteenth century. Junior and Senior elective; prerequisite, German 1. *Both terms, three hours.* Associate Professor BROWN.

3. History of German Literature: lectures with parallel reading and written reports. Junior and Senior elective; prerequisite, German 2A or 2B. *Both terms, two hours.* Assistant Professor RHYNE.

To be omitted in 1914-1915.

4. Middle High German: Paul's *Mittelhochdeutsche Grammatik;* Bachmann's *Mittelhochdeutsches Lesebuch;* translation into New High German. Junior and Senior elective; prerequisite, German 2A or 2B. *Both terms, three hours.* Assistant Professor RHYNE.

5. Old High German: Braune's *Althochdeutsche Grammatik;* Braune's *Althochdeutsches Lesebuch.* Junior and Senior elective; prerequisite, German 2A or 2B. *Both terms, three hours.* Professor TOY.

6. Gothic: Braune's *Gotische Grammatik;* selected parts of Paul's *Grundriss der Germanischen Philologie.* Introduction to Germanic Philology. Junior and Senior elective; prerequisite, German 2A or 2B. *Both terms, three hours.* Professor TOY.

7A. Goethe: Goetz von Berlichingen, Tasso, Dichtung und Wahrheit, Hermann und Dorothea. Junior and Senior elective; prerequisite, German 2A or 2B. *Both terms, two hours.* Associate Professor BROWN.

This course may be elected only after consultation with the instructor.

7B. Goethe: Faust, Parts I and II. Junior and Senior elective; prerequisite, German 2A or 2B. *Both terms, two hours.* Professor Toy.

This course may be elected only after consultation with the instructor.

A certificate is granted to a student who has completed with credit any four courses exclusive of course A.

DEPARTMENT OF GREEK

Charles Wesley Bain, M. A., *Professor of the Greek Language and Literature.*

William Stanly Bernard, A. M., *Associate Professor of Greek.*

A. A course for students who have had no opportunity of studying Greek in the preparatory schools. This course may be counted for entrance only. Moss's *First Greek Reader;* Babbitt's *Greek Grammar;* Xenophon's *Anabasis. Both terms, four hours.* Associate Professor Bernard.

1. Xenophon's Symposium: review of important grammatical principles; Homer's Iliad, books I, II, and III, and Odyssey, book VI; Lysias, Selected Speeches. Reading at sight. Required of Freshmen in Group 1, elective in Group 2. *Both terms, four hours.* Professor Bain and Associate Professor Bernard.

2. Plato, Apology and Crito; Euripides, Hecuba; Aristophanes, Frogs; reading at sight; lectures on Greek Literature. Sophomore elective in Groups 1 and 2. *Both terms, three hours.* Professor Bain.

3. Prose Composition: elementary course, intended as supplementary to Greek 1. Open to students who are taking Greek 1 or 2. *Both terms, one hour.* Professor Bain.

4. Lectures on Old Greek Life: History of Greek Art; textbook and lectures. Junior and Senior elective. *Both terms, two hours.* Professor Bain.

5. Modern Greek: Rangabe's Handbook; Bikelas' Stories; Newspapers. Junior and Senior elective. *Spring term, two hours.* Professor BAIN.

6. Homer: rapid reading of the entire Odyssey. Junior and Senior elective. *Both terms, two hours.* Associate Professor BERNARD.

7. Greek Drama: Euripides, Iphigenia Among the Taurians; Sophocles, Œdipus Tyrannus; Æschylus, Agamemnon; Aristophanes, Wasps; Aristotle, Poetics. Junior and Senior elective. *Both terms, three hours.* Professor BAIN.

9. Demosthenes, three Philippics. Junior and Senior elective. *Spring term, two hours.* Professor BAIN.

10. Thucydides, Book I. Junior and Senior elective. *Fall term, three hours.* Professor BAIN.

14A. The Greek New Testament: The Acts of the Apostles, study of grammar and diction, comparison with English versions. Junior and Senior elective; prerequisite, Greek 2. *Fall term, two hours.* Associate Professor BERNARD.

14B. The Greek New Testament: The Gospels; selections from the Epistles and Revelation; the principles of textual criticism; sources of the Greek text with history of the text and versions. Junior and Senior elective; prerequisite, Greek 14A. *Spring term, two hours.* Associate Professor BERNARD.

15. Classical Archæology: History and Principles of Greek and Roman architecture, sculpture, painting, with some account of the minor arts. Lectures with prescribed reading. Junior and Senior elective. *Both terms, two hours.* Associate Professor BERNARD.

This course is the same as Latin 15.

16. Classical Archæology: Ancient Rome and Athens: a brief survey of the topography and monuments of the two cities. Lectures with prescribed reading. Junior

and Senior elective; open also to Sophomores taking Greek 2 and Latin 2. *Fall term, two hours.* Associate Professor BERNARD.

This course is the same as Latin 16.

17. Greek Epigraphy and Palæography: a brief introduction to the study of Greek inscriptions and manuscripts. Lectures and reports. Senior elective. *Spring term, two hours.* Professor BAIN.

The attention of students electing this course is called to course 14 in the Latin Department.

19. Indo-European Philology; introductory course. History and methods of linguistic study; growth and classification of the Indo-European languages; linguistic palæontology. Junior and Senior elective. *Both terms, two hours.* Associate Professor T. J. WILSON, JR.

The attention of students electing this course is called to courses 6 and 8 in the Department of English and to course 6 in the Department of Germanic Languages. The course is the same as Latin 13.

For courses 8, 11, 12, and 18, see Graduate School.

A certificate is granted to a student who has completed with credit courses 1, 2, 3, and four hours of elective work.

DEPARTMENT OF HISTORY

KEMP PLUMMER BATTLE, A. M., LL. D., *Professor Emeritus of History.*

JOSEPH GREGOIRE DE ROULHAC HAMILTON, Ph.D., *Alumni Professor of History.*

HENRY MCGILBERT WAGSTAFF, Ph. D., *Professor of History.*

DANIEL HUGER BACOT, JR., A. M., *Instructor in History.*

1. American History: a general course covering the social, political, and economic development of the United States; text-books, lectures, and readings. Required of Freshmen in Groups 2 and 3. *Both terms, three hours.* Professors HAMILTON and WAGSTAFF, and Mr. BACOT.

2. Mediæval European History: a general course covering the period, 400-1648; text-books, readings, and lectures. Junior and Senior elective. *Both terms, two hours.* Professor WAGSTAFF.

This course alternates with course 4; to be given in 1914-1915.

3. English History: a general course; text-books, lectures, and readings. Sophomore, Junior, and Senior elective. *Both terms, three hours.* Professor WAGSTAFF.

4. Modern European History: a general course covering the period, 1648-1900; text-books, readings, and lectures. Junior and Senior elective. *Both terms, two hours.* Professor WAGSTAFF.

This course alternates with course 2; to be omitted in 1914-1915.

5. The English Constitution and Government: a careful study of English constitutional development and the present government of the English people. Lectures, text-books, and readings. Junior and Senior elective. *Both terms, two hours.* Professor HAMILTON.

6. North Carolina History: a general study of the constitutional, political, and economic development of the State in the period since the Revolution; lectures, readings, and reports. Junior and Senior elective. *Spring term, two hours.* Professor HAMILTON.

7. The American Government and Constitution: a detailed study of the political customs and institutions of the American people; followed in the spring term by a careful study of the Constitution of the United States by means of cases. Text-books, lectures, and readings. Junior and Senior elective. Open also to Sophomores who have obtained a grade of 90 on History 1. *Both terms, three hours.* Professor HAMILTON.

8. Classical History: a general course dealing largely with the Greeks and Romans; text-books, lectures, and readings. Sophomore, Junior, and Senior elective. *Both terms, three hours.* Mr. BACOT.

9. Spanish-American History 1492-1909: the course especially emphasizes the history of the leading Spanish-American countries from their revolutionary period to the present; lectures, text-books, and readings. Junior and Senior elective; open also to Sophomores. *Both terms, two hours.* Professor WAGSTAFF.

10. Civil War and Reconstruction: a detailed study of the constitutional, political, and economic phases of the period of Civil War and Reconstruction; lectures, readings, and reports. Senior elective. *Both terms, two hours.* Professor HAMILTON.

11. The Middle Period: a careful study of the leading movements in the United States from the adoption of the Constitution to 1850; lectures, readings, and reports. Junior and Senior elective. *Fall term, two hours.* Professor HAMILTON.

To be omitted in 1913-1914.

12A. The Protestant Revolt: a detailed study of the causes, progress, and results of the Protestant movement, with special attention to the lives, doctrines, and influence of Luther and Calvin; text-books, lectures, and readings. Junior and Senior elective. *Fall term, two hours.* Mr. BACOT.

To be omitted in 1914-1915.

12B. The French Revolution: detailed study of the causes, progress and results of the Revolution; text-books, lectures, and readings. Junior and Senior elective. *Spring term, two hours.* Mr. BACOT.

To be omitted in 1914-1915.

15. Modern Municipal Government: a course dealing with urban development and problems in Europe and the United States during the ninteenth century; lectures, readings, and discussion. Junior and Senior elective. *Both terms, two hours.* Mr. BACOT.

A certificate is granted to a student who has completed with credit fifteen hours in History.

For courses 13 and 14, see Graduate School.

DEPARTMENT OF LATIN

GEORGE HOWE, Ph. D., *Professor of the Latin Language and Literature.*

THOMAS JAMES WILSON, JR., Ph. D., *Associate Professor of Latin.*

GEORGE KENNETH GRANT HENRY, A. M., *Instructor in Latin.*

WILBUR HIGH ROYSTER, A. M., *Instructor in Latin.*

1. Cicero, De Senectute and De Amicitia; Livy, Book I; Horace, Odes and Epodes; sight reading. Required of Freshmen in Group 1, elective in Group 2. *Both terms, four hours.* Professor HOWE, Associate Professor WILSON, and Messrs. HENRY and ROYSTER.

2. Plautus, Menæchmi; Terence, Phormio; Horace, Satires and Epistles; Tacitus, Agricola and Germania. Sophomore elective in Groups 1 and 2. *Both terms, three hours.* Professor HOWE, Associate Professor WILSON, and Messrs. HENRY and ROYSTER.

3. Latin Prose Composition: based on Cicero and Livy; intended as supplementary to Latin 1. Open to students who are taking Latin 1 or 2. *Both terms, one hour.* Mr. HENRY.

4. Latin Comedy: reading of selected plays of Plautus and Terence, with a study of the historical development of ancient comedy. Junior and Senior elective. *Both terms, two hours.* Mr. ROYSTER.

This course alternates with course 6; to be omitted in 1914-1915.

5. Pliny, selected Letters; Juvenal, Satires; Martial, selected Epigrams: reading with special reference to the private life of the Romans at the close of the first century A. D. Junior and Senior elective. *Both terms, two hours.* Professor HOWE.

This course alternates with course 9; to be given in 1914-1915.

6. Cicero: rapid reading of the philosophical works, De Officiis and Tusculan Disputations, and of the rhetorical works, Brutus and De Oratore. Junior and Senior

elective. *Both terms, two hours.* Associate Professor WILSON.

This course alternates with course 4; to be given in 1914-1915.

7. Roman Political Institutions: lectures. Junior and Senior elective; open also to Sophomores who are taking Latin 2. *Fall term, two hours.* Professor HOWE.

This course alternates with course 7A; to be omitted in 1914-1915.

7A. The Private Life of the Romans: lectures. Junior and Senior elective; open also to Sophomores who are taking Latin 2. *Fall term, two hours.* Professor HOWE.

This course alternates with course 7; to be given in 1914-1915.

8. History of Roman Literature: lectures. Junior and Senior elective; open also to Sophomores who are taking Latin 2. *Spring term, two hours.* Professor HOWE.

9. Roman Elegiac Poets: rapid reading of selected elegies of Catullus, Tibullus, Propertius, and Ovid; a study of the lives of the elegists; the history of Greek and Roman elegy. Junior and Senior elective. *Both terms, two hours.* Professor HOWE.

This course alternates with course 5; to be omitted in 1914-1915.

10. A Course for Teachers: embracing pronunciation, prosody, the art of reading Latin, and a classification of moods and tenses. Junior and Senior elective. *Both terms, two hours.* Associate Professor WILSON.

13. Indo-European Philology: introductory course. History and methods of linguistic study; growth and classification of the Indo-European languages; linguistic palæontology. Lectures. Junior and Senior elective. *Both terms, two hours.* Associate Professor WILSON.

The attention of students electing this course is called to courses 6 and 8 in the Department of English and to course 6 in the Department of Germanic Languages. The course is the same as Greek 19.

14. Latin Epigraphy and Palæography: a brief introduction to the study of Latin inscriptions and manuscripts.

Lectures and reports. Senior elective. *Fall term, two hours.* Professor HOWE.

The attention of students electing this course is called to course 17 in the Department of Greek.

15. Classical Archæology: History and Principles of Greek and Roman architecture, sculpture, painting, with some account of the minor arts. Lectures with prescribed reading. Junior and Senior elective. *Both terms, two hours.* Associate Professor BERNARD.

This course is the same as Greek 15.

16. Classical Archæology: Ancient Rome and Athens: a brief survey of the topography and monuments of the two cities; lectures with prescribed reading. Junior and Senior elective; open also to Sophomores taking Greek 2 and Latin 2. *Fall term, two hours.* Associate Professor BERNARD.

This course is the same as Greek 16.

For courses 11 and 12, see Graduate School.

A certificate is granted to a student who has completed with credit courses 1, 2, and 3, and six hours of elective work.

DEPARTMENT OF MATHEMATICS

WILLIAM CAIN, A. M., *Professor of Mathematics.*

ARCHIBALD HENDERSON, Ph. D., *Professor of Pure Mathematics.*

MARVIN HENDRIX STACY, A. M., *Professor of Civil Engineering.*

THOMAS FELIX HICKERSON, A. M., *Associate Professor of Civil Engineering.*

ROBERT LANE JAMES, C. E., *Assistant Professor of Drawing.*

JOHN WAYNE LASLEY, JR., A. M., *Instructor in Mathematics.*

WILLIAM WALTER RANKIN, JR., *Instructor in Mathematics.*

JAMES BLAINE SCARBOROUGH, A. B., *Fellow in Mathematics.*

HUBERT WALTER COLLINS, *Assistant in Surveying.*

1. Algebra: from Quadratics through Theory of Equations (Fine's *College Algebra*); Plane and Spherical Trigonometry and Logarithms. Required of Freshmen.

Both terms, four hours. Professor HENDERSON, Associate Professor HICKERSON, and Messrs. LASLEY and RANKIN.

2. Brief Course in Conic Sections: (Smith and Gale's *Analytic Geometry*); Elementary Course in Differential and Integral Calculus (Cain's *Brief Course in the Calculus*). Required of Sophomores in Group 3, elective in Groups 1 and 2. *Both terms, three hours.* Professors CAIN and HENDERSON.

3. Surveying (Raymond) and Higher Surveying, Drawing. Junior and Senior elective; prerequisite, Mathematics 1. *Both terms, three hours.* Professor STACY, Associate Professor HICKERSON, and Mr. COLLINS.

3A. Elementary Mechanics (Loney). Junior and Senior elective; prerequisite, Mathematics 1. *Both terms, two hours.* Associate Professor HICKERSON.

3B. Graphics: Descriptive Geometry; Shades, Shadows, and Elementary Perspective; lectures, recitations. Junior and Senior elective; prerequisite, Drawing 1. *Both terms, two hours.* Assistant Professor JAMES.

3D. Theory of Equations. Sophomore, Junior, and Senior elective; prerequisite, Mathematics 1. *Fall term, two hours.* Professor HENDERSON.

3E. Differential Equations: elementary course. Junior and Senior elective; prerequisite, fall term of Mathematics 4. *Spring term, two hours.* Professor HENDERSON.

4. Calculus, Analytic Mechanics. Junior and Senior elective; prerequisite, Mathematics 2. *Both terms, three hours.* Professor CAIN.

5. Theory of Equations (Burnside and Panton). Junior and Senior elective; prerequisite, Mathematics 2. *Both terms, three hours.* Professor HENDERSON.

6. Differential Equations (Murray). Senior elective; prerequisite, Mathematics 4. *Both terms, three hours.* Professor HENDERSON.

7. Road and Railroad Surveying and Engineering. Senior elective; prerequisite, Mathematics 3. *Both terms, three hours.* Professor STACY.

7A. Hydraulics and Sanitary Engineering. Senior elective; prerequisite, Mathematics 4. *Both terms, three hours.* Professor STACY.

8. Mechanics of Engineering. Senior elective; prerequisite, Mathematics 3A. *Both terms, three hours.* Professor STACY.

10. Theory of Structures. Senior elective; prerequisite, Mathematics 8. *Both terms, four hours.* Associate Professor HICKERSON.

11. Retaining Walls and Dams, Arches. Senior elective; prerequisite, Mathematics 4. *Both terms, two hours.* Professor CAIN.

13. Design of Bridges. Senior elective; to be taken in connection with Mathematics 10. *Both terms, three hours.* Associate Professor HICKERSON.

16. Highway Location, Construction, and Maintenance. Prerequisite, Mathematics 3. Senior elective. *Both terms. two hours.* Associate Professor HICKERSON.

For additional courses, see Graduate School.

Drawing

1. This course is designed to give the student who has never handled mathematical drawing instruments a thorough course of instruction in their use, and an undertaking of the elementary principles of mechanical drawing. Instruction in free hand lettering is given in connection with this course. Text-book, French's *Engineering Drawing. Both terms, two hours.* Assistant Professor JAMES.

2. Civil Engineering Drawing: (*a*) Land survey and topographic mapping; (*b*) Advanced lettering: the Roman and Gothic letters and the arrangement of lettering on

maps and titles: (*c*) Structural Drawing: a study of the drawing of girders, trusses and various minor engineering structures. Prerequisite, Drawing 1. *Both terms, two hours.* Assistant Professor JAMES.

3. Machine Drawing: A study of the representation of machine parts: detail and assembly drawings from models and sketches, careful attention being given to billing of material and to standard drawing room practice and systems. The last few weeks of the course are devoted to the study of the elementary principles of mechanism and the solution of several problems based thereon. Prerequisite, Drawing 1. *Both terms, two hours.* Assistant Professor JAMES.

4. The advanced theory and practice of perspective and its application to engineering structures. Senior elective. Prerequisites, Drawing 1 and Mathematics 3B. *Fall term, two hours.* Assistant Professor JAMES.

5. Stereotomy: a course in the application of Descriptive Geometry to the making of drawings for masonry structures, such as intersecting arches and walls, abutments, piers, and culverts. A study of warped surfaces and drawings for the helicoidal arch. Senior elective; prerequisite, Mathematics 3B. *Spring term, two hours.* Assistant Professor JAMES.

DEPARTMENT OF PHILOSOPHY

HENRY HORACE WILLIAMS, A. M., B. D., *Professor of Philosophy.*

HARRY WOODBURN CHASE, Ph. D., *Professor of the Philosophy of Education.*

1. Psychology: lectures, with text-books. Junior and Senior elective. *Both terms, three hours.* Professor CHASE.

2. Logic: lectures, with text-books; the study of logic in life. Junior and Senior elective. *Both terms, two hours.* Professor WILLIAMS.

3. Ethics: criticism and discussions. Junior and Senior elective. *Both terms, two hours.* Professor WILLIAMS.

4 Philosophy: lectures; theses; a study of the forces that shape life. Junior and Senior elective. *Both terms, three hours.* Professor WILLIAMS.

6. A Companion Course to Philosophy 4. The aim of the course is to sketch the forces masterful in modern life. Junior and Senior elective. *Both terms, three hours.* Professor WILLIAMS.

7. Experimental Psychology: a laboratory study of the simpler mental processes. Senior elective; prerequisite, Philosophy 1. *Fall term, three hours.* Professor CHASE.

Laboratory fee, $3.00.

For course 5, see Graduate School.

DEPARTMENT OF PHYSICS

ANDREW HENRY PATTERSON, A. M., *Professor of Physics.*

VIVIAN LEROY CHRISLER, A. M., *Instructor in Physics.*

EDWIN FULLER CONRAD, *Assistant in Physics.*

BASCOM LEE FIELD, *Assistant in Physics.*

WILLIAM RENNY HARDING, *Assistant in Physics.*

[For description of Physical Laboratories, see page 223.]

A. Elementary Physics: lectures, with text-book, weekly written reviews, laboratory work. May be counted for entrance. *Both terms, three hours.* Messrs. CHRISLER and HARDING.

Laboratory fee, $1.00 a term.

1. General Physics: lectures, with text-book; problems; laboratory work. Required of Sophomores in Group 3; elective in Groups 1 and 2; prerequisite, Mathematics 1. *Both terms, three hours.* Professor PATTERSON and Messrs. CHRISLER, CONRAD, FIELD and HARDING.

Laboratory fee, $1.50 a term.

2. Modern Electrical Theory: the electron theory, electrolysis, conduction of electricity through gases, electrical nature of matter, radioactivity; lectures and recitations. Junior and Senior elective; prerequisite, Physics 1. *Both terms, two hours.* Professor PATTERSON.

4. Electricity and Magnetism: lectures and laboratory work. Junior and Senior elective. *Both terms, two hours.* Professor PATTERSON.

Laboratory fee, $2.00 a term.

5. Descriptive Astronomy: a general course; lectures and recitations with use of lantern slides, telescope, etc. Junior and Senior elective; prerequisite, Physics 1. *Both terms, two hours.* Professor PATTERSON.

6. Heat and Thermodynamics. Junior and Senior elective; prerequisite, Physics 1. *Both terms, two hours.* Professor PATTERSON.

[For courses in Electrical Engineering, see page 47.]

DEPARTMENT OF ROMANCE LANGUAGES

WILLIAM MORTON DEY, Ph. D., *Professor of the Romance Languages and Literatures.*

OLIVER TOWLES, Ph. D., *Associate Professor of the Romance Languages.*

EUGENE FRED PARKER, A. M., *Instructor in the Romance Languages.*

French

A. Elementary Course: grammar; pronunciation taught by the phonetic method; oral and written exercises; translation and reading at sight. This course may be counted for entrance only. *Both terms, three hours.* Professor DEY, Associate Professor TOWLES, and Mr. PARKER.

1. Continuation of Course A: grammar; composition; reading of modern French literature. Required of Freshmen in Group 3; elective in Group 2; Sopho-

more elective. *Both terms, three hours.* Associate Professor TOWLES and Mr. PARKER.

2. Advanced Course: studies in reading and writing French, and in pronunciation; French phonetics. Sophomore elective in Group 2; Junior and Senior elective; prerequisite, French 1. *Both terms, three hours.* Professor DEY.

3. French Literature: a general outline of its various periods. Lectures, reading, reports. Junior and Senior elective; prerequisite, French 2. *Both terms, three hours.* Associate Professor TOWLES.

4A. French Literature in the Seventeenth Century: Lectures, reading, reports. Junior and Senior elective; prerequisite, French 3. *Both terms, three hours.* Associate Professor TOWLES.

This course alternates with course 4B; to be given in 1914-1915.

4B. French Literature in the Eighteenth Century: Lectures, readings, reports. Junior and Senior elective; prerequisite, French 3. *Both terms, three hours.* Professor DEY.

This course alternates with course 4A; to be omitted in 1914-1915.

5. French Literature in the Nineteenth Century: Lectures, reading, reports. Junior and Senior elective; prerequisite, French 3. *Both terms, three hours.* Professor DEY.

A certificate is granted to a student who has completed with credit any four courses exclusive of course A.

For courses for graduate students, see Graduate School.

Spanish

1. Elementary Course; grammar; pronunciation; oral and written exercises; translation and reading at sight. Junior and Senior elective. *Both terms, three hours.* Professor DEY.

2. Second Year Course: wide reading of representative writers of the eighteenth and nineteenth centuries;

grammar; composition based on selected texts. Junior and Senior elective: prerequisite, Spanish 1. *Both terms, three hours.* Professor DEY.

3. Spanish Literature in the Sixteenth and Seventeenth Centuries: Cervantes, Lope de Vega, Calderon. Junior and Senior elective: prerequisite, Spanish 2. *Both terms, two hours.* Professor DEY.

Italian

1. Elementary Course: grammar, pronunciation: oral and written exercises; translation and reading at sight. Junior and Senior elective. Prerequisite, French 1. *Both terms, three hours.* Associate Professor TOWLES.

DEPARTMENT OF ZOOLOGY

HENRY VAN PETERS WILSON, Ph. D., *Professor of Zoology.*

WESLEY CRITZ GEORGE, A. M., *Instructor in Zoology.*

[For description of Biological Laboratories, see page 227.]

1. Elements of Zoology: an introductory course giving an outline of the classification and structure of animals, fundamentals of histology, embryology, and physiology with some consideration of biological theories. Lectures with laboratory work. Sophomore, Junior, and Senior elective, and open to First Year Medical students. *Both terms, three hours.* Professor WILSON and Mr. GEORGE.

2. Comparative Anatomy and Embryology of the Vertebrates: dissection of types, especially amphioxus, petromyzon, fish, fowl, mammal; early stages in embryology of ascaris, starfish; segmentation and formation of germ layers in teleost and frog; germ layers and development of characteristic vertebrate organs in chick; selected stages in development of mammal (rabbit, pig); fundamentals of microscopic technique; laboratory work with occasional lectures. Junior and Senior elective. *Both terms, three hours.* Professor WILSON and Mr. GEORGE.

3. High School Zoology: a brief course covering pedagogic and laboratory methods requisite to the handling of classes in elementary physiology and zoology. Designed for those who expect to teach in the high schools. Prerequisite, Zoology 1. *Spring term, two hours.* Professor WILSON.

4. General Zoology: an advanced course for such as expect to teach or to carry on investigations in zoological, or allied medical, subjects. Laboratory work to cover anatomy, with some histology and embryology, of chief orders of animals, especially invertebrates; collecting trips: identification of forms; essentials of gross and microscopic photography; microscopic technique supplementary to that of the usual courses in embryology and histology. Conferences and lectures dealing with morphology of groups, history of zoology, and the theories of biology as deduced from facts of comparative and experimental study. Junior and Senior elective. *Both terms, five hours.* Professor WILSON.

A certificate is granted to a student who has completed with credit courses 1, 2, 3, 4, and Botany 1.

School of Applied Science

FACULTY

*Francis Preston Venable, Ph.D., D.Sc., LL.D., President.
Andrew Henry Patterson, A. M., Dean.

William Cain, A. M., *Professor of Mathematics.*
Collier Cobb, A. M., *Professor of Geology and Mineralogy.*
Joseph Hyde Pratt, Ph. D., *Professor of Economic Geology.*
Charles Holmes Herty, Ph. D., *Professor of General and Industrial Chemistry.*
Archibald Henderson, Ph. D., *Professor of Pure Mathematics.*
Andrew Henry Patterson, A. M., *Professor of Physics.*
Marvin Hendrix Stacy, A. M., *Professor of Civil Engineering.*
Alvin Sawyer Wheeler, Ph. D., *Professor of Organic Chemistry.*
Parker Hayward Daggett, S. B., *Professor of Electrical Engineering.*
James Munsie Bell, Ph. D., *Professor of Physical Chemistry.*
Thomas Felix Hickerson, A. M., S. B., *Associate Professor of Civil Engineering.*
Robert Lane James, C. E., *Assistant Professor of Drawing.*
Vivian Leroy Chrisler, A. M., *Instructor in Physics.*
John Eliphalet Smith, B. S., *Instructor in Geology.*
John Wayne Lasley, Jr., A. M., *Instructor in Mathematics.*
William Walter Rankin, Jr., A. M., *Instructor in Mathematics.*
William Lewis Jeffries, A. M., *Instructor in Chemistry.*
James Talmage Dobbins, A.M., *LeDoux Fellow in Chemistry.*
Carnie Blake Carter, B. S., *Fellow in Technical Chemistry.*
Victor Clyde Edwards, A. B., *Fellow in Chemistry.*
Leland Brown Rhodes, B. S., *Fellow in Organic Chemistry.*

*Absent on leave 1913-1914.

Frank Davies Conroy, *Assistant in Chemistry.*

Victor Aldine Coulter, B. S., *Assistant in Chemistry.*

Arthur James Flume, *Assistant in Chemistry.*

William Augustus Rudisill, B. S., *Assistant in Chemistry.*

Jackson Townsend, A. B., *Assistant in Chemistry.*

John Wesley McIver, S. B., *Assistant in Electrical Engineering.*

Eldred Oscar Randolph, A. B., *Assistant in Geology.*

Edwin Fuller Conrad, *Assistant in Physics.*

Bascom Lee Field, *Assistant in Physics.*

William Renny Harding, *Assistant in Physics.*

Hubert Walter Collins, *Assistant in Surveying.*

COURSES LEADING TO THE DEGREE OF BACHELOR OF SCIENCE

In order to be recommended for the degree of Bachelor of Science, the student must have passed satisfactory examinations in all the studies required in one of the following courses outlined in this department, I, II, III, IV, and V. Each course combines instruction in certain sciences and their application to the arts with certain other general studies deemed essential to a liberal education. These courses are designed to furnish the fundamental instruction and to prepare students to pursue the technical professions to which they lead. The courses leading to the degree are five in number.

I. Bachelor of Science in Chemical Engineering.
II. Bachelor of Science in Electrical Engineering.
III. Bachelor of Science in Civil and Highway Engineering.
IV. Bachelor of Science in Medicine.
V. Bachelor of Science in Soil Investigation.

ADMISSION

Candidates for admission to the School of Applied Science must present 14 units for unconditioned entrance. A complete list of these units and the requirements in each subject will be found on pp. 32-38 of the general catalogue.

The specific requirements are as follows:

English *a, b, c,*	3. units
History *a* or *b,*	2. units
Mathematics *a, b, c,*	3. units
French *a* or German *a,*	2. units
Science	1. unit
Elective,	3. units

At least twelve units must be offered at entrance.

I. BACHELOR OF SCIENCE IN CHEMICAL ENGINEERING

FRESHMAN YEAR

English 1, Composition	*(3)
Mathematics 1, Advanced Algebra and Trigonometry	(4)
German 1, Translation and Composition	(3)
Chemistry 1, General Chemistry	(3)
Drawing 1, Freehand and Mechanical	(2)

SOPHOMORE YEAR

English 2A, Composition and Literature	(3)
Mathematics 2, Analytics and Calculus	(3)
Chemistry 3, Qualitative Analysis	(2)
Chemistry 4, Quantitative Analysis	(3)
Physics 1, General Course	(3)
Drawing 2, Mechanical and Topographical	(2)

JUNIOR YEAR

Chemistry 16, Inorganic Chemistry, advanced	(1½)
Chemistry 2, Technical Chemistry	(3)
Chemistry 17, Quantitative Analysis, advanced	(3)
Chemistry 5, Organic Chemistry, advanced	(3)
Chemistry 7, Elementary Physical Chemistry	(3)
Geology 1, General Course	(3)
Electrical Engineering 9A, Steam Machinery	(1)

SENIOR YEAR

Chemistry 6, History of Chemistry	(1)
Chemistry 5A, Organic Chemistry	(2)
Select one { Chemistry 7A, Physical Chemistry, advanced	(2)
Select one { Chemistry 7B, Electro-Chemistry	(2)
Chemistry 18, Research	(5)
Electrical Engineering 1A, Electrical Energy	(3)
Physics 6, Thermodynamics (fall term)	(1)
Geology 2, Mineralogy	(3)

*Numerals in parentheses indicate the number of hours a week.

II. BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

FRESHMAN YEAR

English 1, Composition and Literature..... (3)
Mathematics 1, College Algebra and Trigonometry..... (4)
Select one { German 1, Composition and Literature..... (3) / French 1, Composition and Literature..... (3)
Chemistry 1, General Chemistry..... (3)
Drawing 1, Freehand and Mechanical..... (2)

SOPHOMORE YEAR

English 2A, Technical Composition and Literature..... (3)
Mathematics 2, Analytics and Calculus..... (3)
Mathematics 3A, Elementary Mechanics..... (2)
Physics 1, General Physics..... (3)
Physics 4, Electricity and Magnetism..... (2)
Chemistry 3A, Qualitative Analysis.....(1½)
Chemistry 4A, Quantitative Analysis..... (1)
Drawing 3, Mechanism and Empirical Design..... (2)

JUNIOR YEAR

Mathematics 3, Surveying ..... (2)
Mathematics 3B, Descriptive Geometry ..... (2)
Mathematics 4, Calculus and Analytic Mechanics..... (3)
Mathematics 8, Applied Mechanics and Strength of Materials..... (3)
Physics 6, Thermodynamics ..... (2)
Electrical Eng'g. 1, Elements of Electrical Eng'g..... (3)
Electrical Eng'g. 9A, Steam Machinery..... (1)

SENIOR YEAR

Mathematics 7A, Hydraulics ..... (3)
Electrical Eng'g. 2A, Alternating Current Circuits.....(2½)
Electrical Eng'g. 2B, Alternating Current Machinery....(1½)
Electrical Eng'g. 3, Electrical Measurements and Testing (3)
Electrical Eng'g. 4, Dynamo Design..... (2)
Electrical Eng'g. 5, Illuminating Eng'g.....(1½)
Electrical Eng'g. 6, Telephone and Telegraph Eng'g.... (1)
Electrical Eng'g. 7, Power Transmission..... (1)
Electrical Eng'g. 9B, Electric Power Plants..... (1)

III. BACHELOR OF SCIENCE IN CIVIL AND HIGHWAY ENGINEERING

FRESHMAN YEAR

English 1, Composition ..... (3)
Mathematics 1, Advanced Algebra and Trigonometry... (4)
Select one { French 1, Composition and Translation..... (3) / German 1, Composition and Translation..... (3)
Chemistry 1, General Course..... (3)
Drawing 1, Freehand and Mechanical..... (2)

SOPHOMORE YEAR

English 2A, Composition and Literature..... (3)
Mathematics 2, Analytics and Calculus..... (3)
Mathematics 3, Surveying..... (2)
Mathematics 3A, Elementary Mechanics..... (2)
Physics 1, General Course..... (3)
Geology 1, General Course..... (3)
Drawing 2, Mechanical and Topographical..... (2)

JUNIOR YEAR

Mathematics 3B, Descriptive Geometry..... (2)
Mathematics 4, Calculus and Analytical Mechanics..... (3)
Mathematics 7, Road and Railroad Surveying and Eng'g. (3)
Mathematics 16, Road Construction, Drainage, and Location ..... (3)
Geology 8A, Road Materials..... (1)
Drawing 2, Mechanical and Topographical..... (2)
Mathematics 8, Mechanics of Engineering..... (3)

SENIOR YEAR

Mathematics 7A, Hydraulics and Sanitary Engineering (3)
Mathematics 11, Retaining Walls and Dams; Arches..... (2)
Mathematics 10, Theory of Structures..... (4)
Mathematics 13, Design of Structures..... (3)
Electrical Engineering 1A, Electrical Energy..... (3)

IV. BACHELOR OF SCIENCE IN MEDICINE

FRESHMAN YEAR

English 1, Composition ..... (3)
Mathematics 1, Advanced Algebra and Trigonometry... (4)
Chemistry 1, General Course..... (3)

Botany 1, General Course..... (3)

Select one
- German 1, Composition and Translation..... (3)
- French 1, Composition and Translation..... (3)
- Latin 1, Grammar and Translation..... (4)

SOPHOMORE YEAR

English 2, Composition and Literature..... (3)
Physics 1, General Course..... (3)
Zoology 1, General Course..... (3)
Chemistry 3A, Qualitative Analysis.....(1½)
Chemistry 4A, Quantitative Analysis..... (1)

Select one
- German 1 or 2..... (3)
- French 1 or 2..... (3)
- Latin 1 ..... (4)

Select one
- Drawing 1, Freehand and Mechanical..... (2)
- History 1, American..... (3)
- Physics 4 ..... (2)

JUNIOR YEAR *

Organic Chemistry, fall term..... (6)
Toxicology, spring term..... (6)
Comparative Anatomy, fall term..... (6)
Human Anatomy ..... (10)
Histology, fall term ..... (9)
Embryology, spring term..... (6)
Pharmacy, spring term..... (6)

SENIOR YEAR

Human Anatomy, fall term..... (9)
Neuro-Anatomy, fall term..... (6)
Bacteriology, fall term..... (9)
Physiology ..... (7½)
Physiological Chemistry, fall term..... (6)
Pathology, spring term..... (9)
Pharmacology, spring term..... (10)
Minor Surgery, spring term ..... (4)

*The Junior and Senior courses are given in the School of Medicine, where descriptions of courses may be found.

V. BACHELOR OF SCIENCE IN SOIL INVESTIGATION

FRESHMAN YEAR

English 1, Composition ..... (3)
Mathematics 1, Advanced Algebra and Trigonometry... (4)
German 1, Translation and Composition..... (3)
Chemistry 1, General Course..... (3)
Drawing 1, Freehand and Mechanical..... (2)

SOPHOMORE YEAR

English 2A, Composition and Literature..... (3)
Mathematics 3, Surveying ..... (2)
Chemistry 3, Qualitative Analysis..... (2)
Geology 1, General Course..... (3)
Physics 1, General Course..... (3)
Drawing 2, Mechanical and Topographical..... (2)

JUNIOR YEAR

Chemistry 4, Quantitative Analysis ..... (3)
Geology 2, Mineralogy ..... (3)
Botany 1, General Course..... (3)
Chemistry 2, Technical ..... (3)
French 1, Composition and Translation..... (3)

SENIOR YEAR

Geology 6, Research ..... (3)
Geology 7, Advanced Physiography ..... (3)
Geology 8, Origin and Nature of Soils..... (2)
Chemistry 8, Advanced Quantitative Analysis and Research..... (5)
Soils of the United States..... (1½)
Mapping ..... (2)

Courses of Instruction

Only those scientific and language courses which are specifically required in the School of Applied Science are repeated here. For complete description of other courses, see page 42.

DEPARTMENT OF CHEMISTRY

[For description of Chemical Laboratories, see page 225.]

1. General Descriptive Chemistry: a study of the elements and their compounds, including an introduction to Organic Chemistry; lectures with laboratory work. Required of Freshmen. *Both terms, three hours.* Professor Herty and Messrs. Jeffries, Rudisill and Townsend.

Laboratory fee, $1.25 a term.

2. Technical Chemistry: (*a*) Industrial and Agricultural Chemistry: glass-making, acids, alkalies, phosphates, fertilizers, foods, clothing, hygiene, etc. (*b*) Metallurgy: mining, treatment of ores, smelting, chlorination, fuel, building materials, etc. Required of Juniors in Courses I and V; prerequisite, Chemistry 1. *Both terms, three hours.* Professor Herty.

3. Qualitative Analysis: laboratory work with lectures. Required of Sophomores in Courses I and V. *Both terms, two hours.* Professor Wheeler and Mr. Flume.

Laboratory fee, $5.00 a term.

3A. Qualitative Analysis. The behavior of the elements and their compounds is studied in the laboratory. Practice is given in the analysis of known and unknown mixtures. Laboratory work with lectures. Required of Sophomores in courses II and IV. *Fall term, three hours.* Professor Wheeler and Mr. Coulter.

Laboratory fee, $7.50.

4. Quantitative Analysis: laboratory work, lectures, and stoichiometric exercises; a grounding in analytical methods. Required of Sophomores in Course I, and of Juniors in Course V; prerequisite, Chemistry 1. *Both terms, three hours.* Professor BELL.
Laboratory fee, $5.00 a term.

4A. Quantitative Analysis: a brief course in gravimetric methods, followed by a more extended course in volumetric methods. Required of Sophomores in courses II and IV. *Spring term, two hours.* Professor BELL and Mr. COULTER.
Laboratory fee, $4.00 a term.

5. Organic Chemistry. Required of Juniors in Course I; prerequisite, Chemistry 3. *Both terms, three hours.* Professor WHEELER.
Laboratory fee, $4.00 a term.

5A. Organic Chemistry: laboratory work chiefly. This course is designed to give further practice in dealing with organic substances. Required of Seniors in Course I. *Both terms, two hours.* Professor WHEELER.
Laboratory fee, $6.00 a term.

6. History of Chemistry. Required of Seniors in Course I; prerequisite, Chemistry 5 and 7. *Spring term, two hours.* President VENABLE.

7. Elementary Physical Chemistry. Required of Juniors in Course I; prerequisite, Chemistry 3 and 4. *Both terms, three hours.* Professor BELL.
Laboratory fee, $2.00 a term.

7A. Physical Chemistry: lectures and text-books, with laboratory work. Senior elective in Course I; prerequisite, Chemistry 7. *Both terms, two hours.* Professor BELL.
Laboratory fee, $2.00 a term.

7B. Electro-Chemistry: theory and application of electricity to chemical processes. Senior elective in Course I; prerequisite, Chemistry 3, (or 3A) and 4 (or 4A). *Both terms, two hours.* Professor BELL.
Laboratory fee, $2.00 a term.

16. Inorganic Chemistry: a detailed study of the reactions of the elements and their compounds; lectures and text-book. Required of Juniors in Course I; prerequisite, Chemistry 3, and 4. *Spring term, three hours.* Professor HERTY.

17. Quantitative Analysis: laboratory work; extension of course 4 along technical lines. Required of Juniors in Course I; prerequisite, Chemistry 3, and 4. Both *terms, three hours.* Professor HERTY.
Laboratory fee, $5.00 a term.

18. Research. Required of Seniors in Course I; prerequisite, Chemistry 5, 7, and 17. *Both terms, five hours.* Professors HERTY, WHEELER and BELL.
Laboratory fee, $10.00 a term.

The Journal Club meets fortnightly. The current journals, American, English, German, and French, both the purely scientific and the technical, are reviewed by the students and instructors. Attendance is expected of students in advanced courses.

DEPARTMENT OF ELECTRICAL ENGINEERING

[For description of Electrical Engineering Laboratories, see p. 223.]

1. The Elements of Electrical Engineering: a general survey of the fundamental principles of electrical machinery and apparatus. This course is intended to lay a solid foundation in preparation for the more advanced and specialized courses in the department. The work begins with a thorough study of electric and magnetic circuits. The construction and operating features of direct-current machines are then considered, each machine being treated as a combination of these two circuits. Brief consideration is then devoted to batteries, lamps, and to the systems of power transmission. In the second term the elementary theory of alternating currents is begun, and the method of handling the simpler problems in alternating current circuits is studied. The laboratory work comprises a practical study of circuits and machines, and follows the lecture work closely. Text: Christie's *Electrical*

Engineering. Required of Juniors in Course II. Prerequisites, Mathematics 2 and Physics 1 and 4. *Both terms, three hours.* Professor DAGGETT, and Mr. McIVER.

Laboratory fee, $3.00 a term.

1A. Generation, Transmission and Utilization of Electrical Energy. This course is designed primarily for students of Chemical and Civil Engineering, and aims to give them a knowledge of the principles and operating features of electrical apparatus, including dynamos, transformers, storage-batteries, lamps and measuring instruments, together with such a knowledge of systems of electrical power transmission as will enable the student to handle intelligently any engineering problem involving electrical power. The work includes a study of the fundamental phenomena of direct and alternating current circuits, with especial emphasis on their practical applications. Text: Timbie's *Elements of Electricity* and Clewell's *Laboratory Manual of Direct and Alternating Currents.* Required of Seniors in Courses I and III. Prerequisites, Physics 1 and Mathematics 2. *Both terms, three hours.* Professor DAGGETT and Mr. McIVER.

Laboratory fee, $3.00 a term.

2A. Alternating Currents. The work of this course begins with a review of the electric, magnetic and dielectric circuits, and of the elementary theory of alternating currents. A thorough study is then made of the various methods of solving the more complicated problems of single and polyphase circuits. Considerable time is devoted to the study of the effects of iron cores in alternating current circuits and to the analysis of distorted wave forms. This leads to the study of the transformer which serves as a typical example of the fundamental principles previously developed. Throughout the course extensive use is made of the calculus; at the same time, the importance of a clear physical conception of the various phenomena is emphasized, and graphical solutions by means of vector diagrams

are freely employed as a means of visualizing problems. The laboratory work comprises mainly the study of distorted wave forms of current and e. m. f., polyphase circuits, and transformer tests. Text-book: Jacksons' *Alternating Currents and Alternating Current Machinery*. Required of Seniors in Course II. Prerequisites, Mathematics 4 and Electrical Engineering 1. *Fall term, five hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $5.00.

2B. Alternating Current Machinery: a continuation of course 2A, consisting of a thorough study, from the theoretical and experimental points of view, mainly of the following machines; synchronous alternators and motors; induction motors; induction generators; synchronous converters; series alternating current commutator motors. The theory of each machine is developed from the standpoint of the fundamental laws of the electric and magnetic circuits. From the design constants or the machines in the laboratory is made a predetermination of the performance of each machine, and the laboratory work consists mainly in checking and comparing the actual performance of the machines with the predetermined characteristics. A study is also made of the commercial methods of testing the various machines. Required of Seniors in Course II. Prerequisite, Electrical Engineering 2A. *Spring term, three hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $5.00.

3. Electrical Measurements and Testing. This course is mainly a laboratory course in general testing. The work in the laboratory consists of the following tests: calibration of instruments; precise measurements of resistance, inductance and capacity; parallel operation of direct current generators, transformers and alternators; efficiency tests; pumping back methods of loading, including a heat run on a transformer; testing of dielectrics, and miscellaneous tests on storage batteries, potential regulators and frequency changers. About

six weeks of the Spring term are devoted to lectures on electro-chemical processes by Professor Bell, supplemented by laboratory work in the construction of standard cells, conductivity measurements and the manufacture of calcium carbide, silicon carbide and the reduction of aluminum. Laboratory Manual: Karapetoff's *Experimental Electrical Engineering*. Required of Seniors in Course II. Prerequisite, Electrical Engineering 1. *Both terms, three hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $5.00 a term.

4. Dynamo Design. An elementary course in the principles of the design of standard electrical apparatus. The aim of the course is not merely to produce complete designs and drawings based on purely empirical formulæ, which have but little significance to the student, but rather to train the student in rational methods of design, based on the same fundamental principles used in his other work. Emphasis is placed on logical analysis of the various problems, both from a theoretical point of view, and in the light of commercial limitations and economic conditions involved in manufacturing. Texts: Gray's *Electric Machine Design* and Hobart's *Dynamo Design*. Required of Seniors in Course II. Open to students who take or have taken Electrical Engineering 2A and 2B. *Both terms, two hours.* Professor DAGGETT.

5. Illuminating Engineering. The work of this course begins with a study of the physics of light, including an experimental lecture by Professor Patterson, followed by three lectures on the physiological and psychological aspects of the subject by Professors Manning and Chase. Considerable time is then devoted to the subject of photometry, after which a study is made of modern sources of artificial light. Finally are considered the principles of design of interior and exterior illumination, especial attention being devoted to the conservation of the eyesight, and the attainment of the highest efficiency consistent with the best artistic effect.

Reference books: Barrow's *Light, Photometry and Illumination,* and Steinmetz' *Radiation, Light and Illumination.* Required of Seniors in Course II. Prerequisite, Electrical Engineering 1. *Fall term, three hours.* Professor DAGGETT.

Laboratory fee, $3.00.

6. Telephone and Telegraph Engineering. This course deals with the principles of the transmission of intelligence by telephone and telegraph, including a brief study of wireless telegraphy. The various parts of the telephone plant are outlined, together with a study of fault location, loading coils, inductive disturbances and composite lines. Lectures and problem work. Required of Seniors in Course II. Prerequisite, Electrical Engineering 1. *Spring term, two hours.* Professor DAGGETT.

7. Electric Power Transmission. A course of lectures and recitations on the design of long distance transmission lines. (*a*) Economic principles involved in the preliminary design and lay-out. (*b*) Electrical principles: line materials and constants; regulation; transient phenomena; insulation and lightning protection. (*c*) Mechanical design: sag of conductors; spans; poles and towers. Text: Still's *Overhead Electric Power Transmission.* Required of Seniors in Course II. Prerequisite, Electrical Engineering 2A. *Spring term, two hours.* Professor DAGGETT.

9A. Steam Machinery. A general elementary course in the construction, operation and use of the machinery of modern plants, the main object of the course being to give the student a working knowledge of the apparatus in preparation for course 9B. Some of the subjects considered are the construction, and operation of steam boilers; mechanical stokers; fuels and combustion; draft; feed pumps and feed water heaters; piping systems; construction and operation of the simple slide-valve engine; valves and valve-gears; indicating and governing; condensers; multiple-expansion en-

gines; steam turbines. Text: Spangler, Greene and Marshall's *Elements of Steam Engineering*. Required of Juniors in Courses I and II. Prerequisites, Drawing 1 and Physics 1. *Fall term, two hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $2.00.

9B. Electric Power Plants; a continuation of course 9A from the standpoint of the choice of machines and apparatus, and the layout of the plant as a whole. Considerable attention is devoted to the electrical control apparatus and switch-gear. A brief survey is made of the organization and management of power plants, including the questions of rates and relations to the public. The work will be covered by recitations on the text-book supplemented by lectures, and each student will be required to complete one original design. Text: Meyer's *Steam Power Plants*. Required of Seniors in Course II. Prerequisites, Physics 6 and Electrical Engineering 1 and 9A. *Spring term, two hours.* Professor DAGGETT.

DEPARTMENT OF ENGLISH

1. Types of Literature: the short story, the novel, the essay; the lyric, the epic, the ballad, and the drama. Practical rhetoric and theme writing during the second term. This course lays the foundation for the student's later studies in both literature and composition. Required of Freshmen. *Both terms, three hours.* Professor ROYSTER, Associate Professor BOOKER, and Messrs. SNEATH and STEADMAN.

2A. Technical Composition for Engineers. First term: a study of the forms of scientific writing—description, exposition, directions—with the aim of developing clearness, accuracy, and logical thinking. Preparation and criticism of daily and weekly themes, and reading of illustrative literature from engineering magazines. Text-book: Sypherd's *Handbook of English for Engineers*. Second term: History of English Literature. Required of Sophomores in Courses I, II, III, and V. *Both terms, three hours.* Mr. SNEATH.

DEPARTMENT OF GEOLOGY AND MINERALOGY

[For description of Geological Laboratories, see page 228.]

1. Elementary Geology: lectures with field work; laboratory work on the common minerals and rocks. Required of Sophomores in Courses II, III and V, and of Juniors in Course I. *Both terms, three hours.* Professor COBB, and Mr. RANDOLPH.

Laboratory fee, $3.00 for the spring term.

2. Mineralogy: crystallography, physical and chemical properties of minerals, blowpipe analysis, determinations; lectures, laboratory, and field work; Dana's *Manual of Mineralogy* (Ford). Required of Juniors in Course V and Seniors in Course I; prerequisite, Geology 1 and Chemistry 1. *Both terms, three hours.* Mr. SMITH.

Laboratory fee, $5.00 a term.

4. Economic Geology: ore deposits, coal, oil and gas, clays, building stone, cement materials, fertilizers, underground waters, etc.; occurrence, methods of exploitation, production and conservation of mineral resources; lectures, laboratory, and field work. Junior and Senior elective; prerequisite, Geology 1 and Chemistry 1, *Both terms, three hours.* Mr. SMITH.

Laboratory fee, $1.00 a term.

6. Advanced Field Work and special research in Geology or Geography: problems and work adapted to the professional needs of the student. Students in this course are expected to keep Saturday open for field work. Required of Seniors in Course V; prerequisite, two courses in Geology. *Both terms, three hours.* Professor COBB.

8. Origin and Nature of Soils: field work, laboratory and theses. Students in this course are expected to keep Saturday open for field work. Required of Seniors in Course V. *Both terms, three hours.* Professor COBB.

Laboratory fee, $3.00 a term.

8A. Road Materials: rocks, sands, clays, asphalts, concrete, dust preventives, etc.; their properties and adaptations; laboratory and field work. Required of Juniors in Course III; prerequisite, Geology 1. *Both terms, one hour.* Mr. SMITH.

Laboratory fee, $1.00 a term.

10. Soils of the United States: an introductory study of the chief soil provinces, soil series, and soil areas of the United States, with special reference to the soils of North Carolina. Required of Seniors in Course V. *Spring term, two hours.* Professor COBB and Mr. HEARN.

10A. Soil Mapping: preparation of large scale soil maps of the Chapel Hill region. Required of Seniors in Course V. *Both terms, two hours.* Professor COBB and Mr. HEARN.

11. Mineral and Ore Deposits: lectures supplemented by laboratory and field work. *Twenty-four lectures (spring term).* Professor PRATT.

12. Advanced Work in Mineralogy. *One hour.* Professor PRATT.

The Geological Seminary meets fortnightly for review and discussion of current geological literature, and for the presentation of original papers.

DEPARTMENT OF GERMANIC LANGUAGES

A. Elementary Course: grammar; written and oral exercises; translation; sight reading. This course may be counted for entrance only. *Both terms, three hours.* Professor TOY, Associate Professor BROWN, and Assistant Professor RHYNE.

1. Translation, Sight Reading, Composition, Grammar: required of Freshmen in Courses I and V; elective in Courses II, III, IV. *Both terms, three hours.* Professor TOY and Associate Professor BROWN.

DEPARTMENT OF MATHEMATICS

1. Algebra, from Quadratics through Theory of Equations (Fine's *College Algebra*); Plane and Spherical Trigonometry and Logarithms. Required of Freshmen. *Both terms, four hours.* Professor HENDERSON, Associate Professor HICKERSON, and Messrs. LASLEY and RANKIN.

2. Brief Course in Conic Sections: (Smith and Gale's *Analytic Geometry*); Elementary Course in Differential and Integral Calculus (Cain's *Brief Course in the Calculus*). Required of Sophomores. *Both terms, three hours.* Professors CAIN and HENDERSON.

3. (*a*) Surveying (Raymond), and (*b*) Higher Surveying. Required of Sophomores in Courses III, and V, and of Juniors in Course II. *Both terms, two hours.* Professor STACY, Associate Professor HICKERSON, and Mr. COLLINS.

3A. Elementary Mechanics (Loney). Required of Sophomores in Courses II and III. *Both terms, two hours.* Associate Professor HICKERSON.

3B. Graphics: Descriptive Geometry; Shades, Shadows, and Elementary Perspective. Required of Juniors in Courses II and III. *Both terms, two hours.* Assistant Professor JAMES.

4. Calculus, Analytic Mechanics. Required of Juniors in Courses II and III; prerequisite, Mathematics 2. *Both terms, three hours.* Professor CAIN.

7. Railroad Surveying and Railroad Engineering. Required of Juniors in Course III; prerequisite, Mathematics 3. *Both terms, three hours.* Professor STACY.

7A. Hydraulics and Sanitary Engineering. Required of Seniors in Courses II and III; prerequisite, Mathematics 4. *Both terms, three hours.* Professor STACY.

8. Mechanics of Engineering. Required of Juniors in Courses II and III; prerequisite, Mathematics 3A. *Both terms, three hours.* Professor STACY.

10. Theory of Structures. Required of Seniors in Course III; prerequisite, Mathematics 8. *Both terms, four hours.* Associate Professor HICKERSON.

11. Retaining Walls and Dams; Arches. Required of Seniors in Course III; prerequisite, Mathematics 4. *Both terms, two hours.* Professor CAIN.

13. Design of Bridges. Required of Seniors in Course III; to be taken in connection with Mathematics 10. *Both terms, three hours.* Associate Professor HICKERSON.

16. Highway Location, Construction, and Maintenance. Required of Juniors in Courses III and IIIA. *Both terms, two hours.* Associate Professor HICKERSON.

Engineering Drawing

1. This course is designed to give the student who has never handled mathematical drawing instruments a thorough course of instruction in their use and an understanding of the elementary principles of mechanical drawing. Instruction in free-hand lettering is given in connection with the course. Text book: French's *Engineering Drawing.* Required of Freshmen in Courses I, II, III, V; Sophomore elective in Course IV. *Both terms, two hours.* Assistant Professor JAMES.

2. Civil Engineering Drawing: (*a*) land survey and topographic mapping; (*b*) advanced lettering: the Roman and the Gothic letters and the arrangement of lettering on maps and titles; (*c*) structural drawing: a study of the drawing of girders, trusses, and various minor engineering structures. Required of Sophomores in Course I, III, V; prerequisite, Drawing 1. *Both terms, two hours.* Assistant Professor JAMES.

3. Machine Drawing. A study of the representation of machine parts; detail and assembly drawings from models and sketches, careful attention being given to billing of material and to standard drawing room practice and systems. The last few weeks of the course are

devoted to the study of the elementary principles of mechanism and the solution of several problems based thereon. Required of Sophomores in Course II; prerequisite, Drawing 1. *Both terms, two hours.* Assistant Professor JAMES.

4. Advanced theory and practice of perspective and its application to engineering structures. Senior elective; prerequisite, Drawing 1 and Mathematics 3B. *Fall term, two hours.* Assistant Professor JAMES.

5. Stereotomy: a course in the application of descriptive geometry to the making of drawings for masonry structures, such as intersecting arches and walls, abutments, piers, and culverts; a study of warped surfaces and drawings for the helicoidal arch. Senior elective; prerequisite, Mathematics 3B. *Spring term, two hours.* Assistant Professor JAMES.

DEPARTMENT OF PHYSICS

[For description of Physical Laboratories, sse page 223.]
[For courses in Electrical Engineering, see page 85.]

A. Elementary Physics: lectures, with text-book, written reviews, laboratory work. May be counted for entrance. *Both terms, three hours.* Professor PATTERSON, Messrs. CHRISLER and HARDING.

Laboratory fee, $1.00 a term.

1. General Physics: lectures, with text-book; problems; laboratory work. Required of Sophomores; prerequisite, Mathematics 1. *Both terms, three hours.* Professor PATTERSON and Messrs. CHRISLER, CONRAD, FIELD and HARDING.

Laboratory fee, $1.50 a term.

4. Electricity and Magnetism: Lectures, with Laboratory Work. Required of Sophomores in Course II. *Both terms, two hours.* Professor PATTERSON.

Laboratory fee, $2.00 a term.

6. Heat and Thermodynamics. Required of Juniors in Course II, and of Seniors in Course I; prerequisite, Physics 1. *Both terms, two hours.* Professor PATTERSON.

DEPARTMENT OF ROMANCE LANGUAGES

French

A. Elementary Course: grammar; pronunciation taught by the phonetic method; oral and written exercises; translation and reading at sight. This course may be counted for entrance only. *Both terms, three hours.* Professor DEY, Associate Professor TOWLES, and Mr. PARKER.

1. Continuation of Course A: grammar; composition; reading of modern French literature. Freshmen elective in Courses II, III, and IV. *Both terms, three hours* Associate Professor TOWLES and Mr. PARKER.

The School of Education

FACULTY

*Francis Preston Venable, Ph.D., Sc.D., LL.D., President.

Marcus Cicero Stephens Noble, *Professor of Pedagogy and Dean of the School of Education.*

Nathan Wilson Walker, A. B., *Professor of Secondary Education.*

Harry Woodburn Chase, Ph. D., *Professor of the Philosophy of Education.*

Louis Round Wilson, Ph. D., *Professor of Library Administration.*

Lester Alonzo Williams, A. M., Pd. D., *Professor of School Administration.*

*Zebulon Judd, A. B., *Professor of Rural Education.*

Edgar Ralph Rankin, A. B., *Instructor in Education.*

HISTORY AND PURPOSE OF THE SCHOOL

Since the re-organization of the University in 1875, it has always stood for the academic and professional training of young men to teach in the elementary and secondary schools of the state both public and private, and about forty per cent of its graduates, together with many of its undergraduates, have served the state as teachers, principals, and superintendents.

In 1877, during the presidency of Dr. Kemp P. Battle, a summer school for teachers was established at the University. and Dr. Barnas Sears, General Agent for the Peabody Fund, declared "that it was the first summer school for teachers in the Union connected with any university or college."

In 1885, Nelson B. Henry, of Missouri, was elected to the Chair of the Science and Art of Teaching. This was one of the first professorships of education established in the United States. In 1887 the Legislature withdrew the appropriation and the Chair was discontinued.

In 1893, Dr. Edwin A. Alderman was elected Professor of History and Philosophy of Education. Dr. Alderman held

*Absent on leave 1913-1914.

this professorship until he was promoted to the presidency of the University in 1896.

In 1898, Superintendent M. C. S. Noble of the Wilmington, N. C., Public Schools was elected Professor of Pedagogy.

In 1905 Superintendent Nathan Wilson Walker of the Asheboro Public School was elected Professor of Secondary Education, and in 1910 the School was further strengthened by the election of Dr. H. W. Chase as Professor of the Philosophy of Education.

This steady development of the School of Education was recognized by the Peabody Board, in 1912, by a gift of $40,000 with which an educational building, known as the George Peabody Building, has been built and furnished with all modern conveniences.

In 1913, the trustees elected Professor M. C. S. Noble Dean of the School of Education and established two new professorships,—namely School Administration and Rural Education.

The purpose of the School of Education, in its new building and with its larger faculty, will be to prepare young men for a still broader and more effective service as teachers, principals, and superintendents in the public school systems of the several counties and cities of North Carolina, and also to fit them for progressive leadership in the educational development of state and nation. It also offers graduate courses for those who are already teaching so that they may more thoroughly equip themselves for their work.

ADMISSION

The requirements for admission are the same as for the other Schools in the University,—namely the completion of a four years High School course covering fourteen units.

Students can be admitted with twelve units, removing the conditions of two units during the Freshman year.

After the completion of the Freshman and Sophomore years as laid down in the general catalogue in any of the courses for the A. B. degree, the studies offered in the School of Education may be taken up.

The Committee on Entrance Certificates has the discretionary power to admit certain candidates if, in the opinion of the Committee, the maturity of the candidate, who must be at least

twenty-one years of age, justifies such action. Candidates thus admitted will be classified as special students.

Upon the satisfactory completion of the four years course students will receive the A. B. degree.

CERTIFICATES IN EDUCATION

Requirements for the Certificate in Education

All candidates for the certificate in Education will be required to take not less than fourteen hours from the following:

Elementary Psychology (See Philosophy 1)	3	hours
Education 1 and 2	3	hours
Education 5 and 6	2	hours
Education 7	1½	hours
or		
Education 11	2	hours
Education 4	1½	hours
or		
Education 14	2	hours
Education 9 and 10	3	hours

Courses of Instruction

The following courses will be offered in Educational Psychology, Practical and Experimental Pedagogy, School Administration, Rural Education, Public School Library Administration, and the History of Education:

1. The Science of Teaching: the practical application of scientific principles to the teaching of elementary branches; a brief study of modern educational theories; preparation of model lessons according to pedagogical principles; lectures, text-books, and theses. Junior and Senior elective, open only to those who intend to teach (not counted for a degree unless Education 2 is also taken.) *Fall term, three hours.* Professor Noble.

2. The Art of Teaching: a careful study of the principles and methods involved in successfully teaching those studies usually taught in the best public and private elementary schools; lectures, text-books, and theses. Junior and Senior elective, open only to those who intend to teach; prerequisite, Education 1. *Spring term, three hours.* Professor Noble.

3. Science and Practice of Education: a study of modern education from the view-point of both teacher and citizen; the development and arrangement of a High School course of study; lectures, text-books, parallel readings, theses. Junior and Senior elective. *Fall term, three hours.* Professor Noble.

4. The General History of Education: the development of educational ideals in the past; the effect of the pedagogical doctrines of the great educators of the past upon modern educational systems; lectures, text-book, parallel readings, criticisms, theses. Junior and Senior elective. *Spring term, three hours.* Professor Noble.

5. High School Organization: a study of the organization of the American high school with special attention to

its curricula and methods. Text-books, lectures, and assigned readings. Brown's *The American High School* and De Garmo's *Principles of Secondary Education*. Open to teachers. *Fall term, three hours.* Professor WILLIAMS.

6. High School Administration: a study of the principles and problems of American high school administration. Text-books, lectures, and assigned readings. Hollister's *High School Administration*. Open to teachers; prerequisite, Education 5. *Spring term, three hours.* Professor WILLIAMS.

7. Educational Psychology. The application of the principles of psychology to education. Text, lectures, assigned readings. Prerequisite, Philosophy 1. *Fall term, three hours.* Professor CHASE.

8. Experimental Pedagogy. A laboratory study of some of the simpler scientific educational problems. Senior elective. Prerequisite, Education 7. *Spring term, three hours.* Professor CHASE.

Laboratory fee, $3.00.

9. Class Management: a study of the actual and ideal working conditions in the classroom. Text-books, discussions, and readings. Junior and Senior elective. Open to teachers. *Fall term, three hours.* Professor WILLIAMS.

10. School Supervision. A discussion of the means, method, and desirable results of school and class supervision, the function of special supervision. Lectures, readings, reports. Junior and Senior elective. Prerequisite, Education 9. *Spring term, three hours.* Professor WILLIAMS.

11. Genetic Psychology. The study of mental development as conditioned by the forces of heredity and environment. The period of adolescence will be stressed. Senior elective, prerequisite, Philosophy 1. *Both terms, two hours.* Professor CHASE.

12. The Philosophy of Education: a study of the underlying principles shaping educational systems, past and present. Seminar course, readings, theses, discussions. Open to graduates only. *Both terms, two hours.* Professor CHASE.

13. American Education: a study of the development of the school systems in the United States, with a comparative study of the principal European systems; research and lectures. *Both terms, two hours.* Professor NOBLE.

14. Current Education: a study of present educational tendencies as seen in typical rural and city school systems, and the development and supervision of the American public school. For teachers who wish to prepare for work as principals and superintendents. Junior and Senior elective. *Both terms, two hours.* Professor NOBLE.

15. History of Modern Education. A comparative study of present day problems in the light of their past. Lectures, discussions, reports. Senior elective; prerequisite, Education 4. Open to teachers. *Both terms, two hours.* Professor WILLIAMS.

16. General Administration: a course demonstrative of how to study and solve administrative problems arising in one's own school. Discussions, reports, theses. Senior elective; prerequisite, Education 5 and 6. *Both terms, two hours.* Professor WILLIAMS.

17. Rural Sociology. Social, economic, industrial, and topographical conditions will be studied as determining the character, organization, and administration of district and county school systems. A survey of an available county along the lines here indicated will be made. Junior and Senior elective. *Both terms, three hours.* Professor JUDD.

18. Rural School Curricula. Lectures, required readings, and discussions. This course will concern itself with the content and organization of courses of study, and

with methods of teaching. Junior and Senior elective. *Both terms, three hours.* Professor JUDD.

PHILOSOPHY

1. Elementary Psychology: text, lectures, assigned readings. Junior and Senior elective. *Both terms, three hours.* Professor CHASE.

7. Experimental Psychology: a laboratory study of the simpler mental processes. Senior elective, prerequisite, Philosophy 1. *Fall term, three hours.* Professor CHASE.

Laboratory fee, $3.00.

LIBRARY ADMINISTRATION

1. School Library Administration: a study of the principles and practical management of school libraries, preparation of debates and debate references, reference books, reading courses and children's readings, book selection and ordering, classification and cataloguing, technical methods; practice in the University library. Junior and Senior elective, open only to library assistants, or to those who take either Education 1 and 2, or Education 5 and 6. *Both terms, two hours.* Professor WILSON.

LECTURE COURSES

From time to time there will be given by instructors in the academic faculty a series of lectures on the teaching of preparatory Latin, Greek, German, French, English, Mathematics, and the sciences.

Professor Walker, State High School Inspector, and Professor L. C. Brogden, Supervisor of Elementary Public Schools, will also deliver lectures on their work in the schools of the state, and all students applying for a certificate in education may attend such lectures as may be agreed upon in conference with the Dean of the School of Education.

CORRESPONDENCE COURSES

Correspondence Courses in North Carolina Geography and History, English Composition, Latin, Greek, German, French

and elementary sciences are being arranged and definite information as to any of these courses may be obtained by addressing the Dean.

THE ARCHIBALD D. MURPHEY EDUCATION CLUB

M. C. S. Noble, *President.*
E. R. Rankin, *Vice-President.*
E. M. Coulter, *Secretary.*

This club meets six times during each scholastic year. The objects of the Club are to interest every member of the University community in the cause of public education at public expense, to begin here at the University among the students a work that shall send them into active life committed to constant effort to place within the reach of every boy and girl in the state a public school education from the first grade in an elementary school to the senior class in any of the state educational institutions, and to keep in touch and sympathy with the County Teachers Association and the public school work in the counties represented by the members of the club.

FREE TUITION

By an act of the Legislature in 1887, free tuition is given to teachers, and to young men preparing to teach. This enables the University to aid effectively the public school teachers of the State.

The Graduate School

COMMITTEE

*Francis Preston Venable, Ph.D., D.Sc., LL.D,. President.

Charles Lee Raper, Ph. D., Dean.

Edward Kidder Graham, A. M.

Harry Woodburn Chase, Ph. D.

Henry McGilbert Wagstaff, Ph. D.

FACULTY

Walter Dallam Toy, M. A., *Professor of the Germanic Languages and Literatures.*

William Cain, A. M., *Professor of Mathematics.*

Henry Horace Williams, A. M., B. D., *Professor of Philosophy.*

Henry Van Peters Wilson, Ph. D., *Professor of Zoology.*

Collier Cobb, A. M., *Professor of Geology and Mineralogy.*

Marcus Cicero Stephens Noble, *Professor of Pedagogy.*

George Howe, Ph. D., *Professor of the Latin Language and Literature.*

Charles Holmes Herty, Ph. D., *Professor of General and Industrial Chemistry.*

Charles Lee Raper, Ph. D., *Professor of Economics.*

William Chambers Coker, Ph. D., *Professor of Botany.*

Archibald Henderson, Ph. D., *Professor of Pure Mathematics.*

Joseph Gregoire de Roulhac Hamilton, Ph.D., *Alumni Professor of History.*

Andrew Henry Patterson, A. M., *Professor of Physics.*

Henry McGilbert Wagstaff, Ph. D., *Professor of History.*

William Morton Dey, Ph. D., *Professor of the Romance Languages and Literatures.*

Marvin Hendrix Stacy, A. M., *Professor of Civil Engineering.*

James Finch Royster, Ph. D., *Professor of English.*

*Absent on leave 1913-1914.

Charles Wesley Bain, M. A., *Professor of Greek.*

Harry Woodburn Chase, Ph. D., *Professor of the Philosophy of Education.*

Alvin Sawyer Wheeler, Ph.D., *Professor of Organic Chemistry.*

Parker Hayward Daggett, S. B., *Professor of Electrical Engineering.*

James Munsie Bell, Ph. D., *Professor of Physical Chemistry.*

Edwin Greenlaw, Ph. D., *Professor of English.*

Lester Alonzo Williams, A. M., Pd. D., *Professor of School Administration.*

Thomas James Wilson, Jr., Ph. D., *Associate Professor of Latin.*

William Stanly Bernard, A. M., *Associate Professor of Greek.*

Oliver Towles, Ph. D., *Associate Professor of the Romance Languages.*

Thomas Felix Hickerson, A. M., S. B., *Associate Professor of Civil Engineering.*

Kent James Brown, Ph. D., *Associate Professor of German.*

Orestes Pearle Rhyne, Ph. D., *Assistant Professor of German.*

John Eliphalet Smith, B. S., *Instructor in Geology.*

CANDIDATES FOR GRADUATE WORK

Graduates of the University of North Carolina and of other universities and colleges of good standing are, upon application to the President or Dean, ordinarily admitted to advanced courses of instruction free of charge for tuition. There is, however, a registration fee of fifteen dollars for each term. An applicant for admission, unless a graduate of the University of North Carolina, is required to present his diploma and a certificate of scholarship and character. If in any department the preliminary training of candidates has not been sufficient to qualify them for strictly graduate work, they will be required to take such undergraduate courses as may be prescribed by the head of the department; but these courses will not be counted for hours in work leading to a graduate degree.

Students who are not graduates may, if they prove themselves qualified, take graduate courses; but no graduate degree will be given a student who does not already hold a Bachelor's degree from some institution of approved standing.

All courses must be approved by the President or Dean.

DEGREES

The University offers to graduate students advanced work leading to the degrees of Master of Arts (A. M.), Master of Science (S. M.), and Doctor of Philososphy (Ph. D.).

MASTER OF ARTS

Candidates for the degree of Master of Arts must complete satisfactorily one year of study consisting of at least fifteen hours a week of recitations or lectures, eight hours of which must be taken from courses in the Graduate School, the remaining seven from courses in the Graduate School or from undergraduate courses open to Juniors and Seniors. The candidate must select one major subject, to which he shall devote at least half of his time, and one allied minor subject. He may, with the approval of the Dean and of the professor in charge of his major subject, select a second minor subject. He shall be required to have a reading knowledge of French and German in case the professor in charge of his major subject thinks it necessary for efficient work. The course as a whole must have unity and must be pursued with definite aim.

A thesis based on the major subject of study and showing capacity for original research must be submitted on or before May 1 of the given year, and must be filed in typewritten form on or before May 15.

MASTER OF SCIENCE

The degree of Master of Science is conferred under conditions similar to those stated above for the degree of Master of Arts.

DOCTOR OF PHILOSOPHY

A candidate for the degree of Doctor of Philosophy is required to pursue, in residence at the University, a prescribed course of advanced study and research in one major subject

and two allied minor subjects. In general a term of three years is required, but the degree may be secured in two years in the case of exceptional preliminary training in the major subject.

These requirements of residence and study are, however, entirely secondary. The degree is conferred not simply for faithful study in a determinate field of work for a prescribed period, but because of a high attainment in a special branch of learning, which the candidate must have manifested not only in examination, but by a thesis which gives evidence of independent research and contributes to knowledge. The thesis must be accepted before the candidate may be admitted to examination. The examinations are both written and oral. They demand a minute knowledge of a special field of work as well as a general acquaintance with the department of learning in which the candidate offers himself for the degree. The candidate must also give proof of his ability to read French and German.

Courses of Instruction

DEPARTMENT OF BOTANY

[For description of Biological Laboratories, see page 227.]

2. Physiology: a general course in plant physiology; lectures with laboratory and field experiments. Open to Juniors and Seniors. *Both terms, three hours.* Professor Coker and Mr. Totten.

3. Special Morphology of the Algæ and Fungi, with attention to the culture of lower fungi, and the identification of mushrooms; lectures with laboratory and field work. Open to Juniors and Seniors. *Both terms, three hours.* Professor Coker and Mr. Totten.

4. Plant Morphology: advanced work in the embryology and anatomy of plants. The student is required to collect and prepare material for the microscopic study of special problems. Theses. *Both terms, five hours or more.* Professor Coker.

DEPARTMENT OF CHEMISTRY

[For description of Chemical Laboratories, see page 225.]

11. Research in Inorganic, Analytical, and Industrial Chemistry. This course (with 12 and 13) is intended only for applicants for the degree of Doctor of Philosophy or properly equipped students who desire special training in advanced chemical research. It requires, in addition to the laboratory work, daily conference with the professor and continual reference to the literature touching the matter under investigation. The work is usually assigned by the professor, but by special permission the student may elect to work upon problems to which he wishes to give particular attention. *Both terms, six hours.* Professor Herty.

Laboratory fee, $12.50 a term.

12. Research in Organic Chemistry. The statements made in regard to course 11 apply also to this course. *Both terms, six hours.* Professor WHEELER.

Laboratory fee, $12.50 a term.

13. Research in Physical Chemistry. The statements made in regard to course 11 apply also to this course. *Both terms, six hours.* Professor BELL.

Laboratory fee, $12.50 a term.

14. Advanced Inorganic Chemistry. The elements are studied with the idea of showing the fundamental laws of Chemistry and the deep-seated relations involved in and leading up to the Periodic System. Attention is also given to those portions of Inorganic Chemistry not usually dwelt upon in the regular courses. The applications of Physico-chemical laws and generalizations are emphasized throughout the course. *Both terms, two hours.* Professor HERTY.

15. Advanced Organic Chemistry: Seminar Course; readings and discussions; a study of class reactions with reference to their application to organic research is taken up, and special attention is given to the most important modern investigations. *Both terms, two hours.* Professor WHEELER.

The *Journal Club* meets fortnightly. The current journals, American, English, German, and French, purely scientific and technical, are reviewed by the students and instructors. Attendance upon the meetings of the Club is expected of all students taking the above courses.

DEPARTMENT OF ECONOMICS

2. Public Finance: a general study of the principles which are involved in the revenues and expenditures of the State, and in the relation of the State to the industries of its citizens; a special study of taxation and the tariff; lectures, readings, and reports; Adams' *The Science of Finance.* Open to Seniors. *Both terms, two hours.* Professor RAPER.

Given in alternate years; to be given in 1914-1915.

3. Economic Institutions and Thought in England and the United States; a general study, largely from the historical point of view, of the economic institutions and the systems of economic thought in England and the United States; a special study of socialism; lectures, readings, and reports; Cheyney's *Industrial and Social History of England,* Brooks' *The Social Unrest,* Spargo's *Socialism,* and the *Communist Manifesto* (Marx and Engels). Open to Seniors. *Both terms, two hours.* Professor RAPER.

EDUCATION

11. Genetic Psychology: the study of mental development as conditioned by the forces of heredity and environment. The period of adolescence will be stressed. Open to Seniors; prerequisite, Philosophy 1. *Both terms, two hours.* Professor CHASE.

12. The Philosophy of Education: a discussion of the underlying principles shaping educational systems, past and present. Seminar course; readings, theses, discussions. *Both terms, two hours.* Professor CHASE.

13. American Education: a study of the development of the school systems in the United States, with a comparative study of the principal European systems; research and lectures. *Both terms, two hours.* Professor NOBLE.

16. General Administration: a course demonstrative of how to study and solve administrative problems arising in one's own school. Discussions, reports, theses. Open to Seniors; prerequisite, Education 5 and 6. *Both terms, two hours.* Professor WILLIAMS.

DEPARTMENT OF ELECTRICAL ENGINEERING

[For Electrical Engineering Laboratories, see page 223.]

2A. Alternating Currents. The work of this course begins with a review of the electric, magnetic and dielectric circuits, and of the elementary theory of alternating currents. A thorough study is then made of the

various methods of solving the more complicated problems of single and polyphase circuits. Considerable time is devoted to the study of the effects of iron cores in alternating current circuits and to the analysis of distorted wave forms. This leads to the study of the transformer which serves as a typical example of the fundamental principles previously developed. Throughout the course extensive use is made of the calculus; at the same time, the importance of a clear physical conception of the various phenomena is emphasized, and graphical solutions by means of vector diagrams are freely employed as a means of visualizing problems. The laboratory work comprises mainly the study of distorted wave forms of current and e. m. f., polyphase circuits, and transformer tests. Text-book: Jacksons' *Alternating Currents and Alternating Current Machinery*. Open to Seniors. Prerequisites, Mathematics 4 and Electrical Engineering 1. *Fall term, five hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $5.00.

2B. Alternating Current Machinery: a continuation of course 2A consisting of a thorough study, from the theoretical and experimental points of view, mainly of the following machines; synchronous alternators and motors; induction motors; induction generators; synchronous converters; series alternating current commutator motors. The theory of each machine is developed from the standpoint of the fundamental laws of the electric and magnetic circuits. From the design constants of the machines in the laboratory is made a predetermination of the performance of each machine, and the laboratory work consists mainly in checking and comparing the actual performance of the machines with the predetermined characteristics. A study is also made of the commercial methods of testing the various machines. Open to Seniors; prerequisite, Electrical Engineering 2A. *Spring term, three hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $5.00.

3. Electrical Measurements and Testing. This course is mainly a laboratory course in general testing. The work in the laboratory consists of the following tests: calibration of instruments; precise measurements of resistance, inductance and capacity; parallel operation of direct current generators, transformers and alternators; efficiency tests; pumping back methods of loading, including a heat run on a transformer; testing of dielectrics, and miscellaneous tests on storage batteries, potential regulators and frequency changers. About six weeks of the Spring term are devoted to lectures on electro-chemical processes by Professor Bell, supplemented by laboratory work in the construction of standard cells, conductivity measurement and the manufacture of calcium carbide, silicon carbide and the reduction of aluminum. Laboratory Manual: Karapetoff's *Experimental Electrical Engineering.* Open to Seniors; prerequisite, Electrical Engineering 1. *Both terms, three hours.* Professor DAGGETT and Mr. MCIVER.

Laboratory fee, $5.00 a term.

4. Dynamo Design. An elementary course in the principles of the design of standard electrical apparatus. The aim of the course is not merely to produce complete designs and drawings based on purely empirical formulæ, which have but little significance to the student, but rather to train the student in rational methods of design, based on the same fundamental principles used in his other work. Emphasis is placed on logical analysis of the various problems, both from a theoretical point of view, and in the light of commercial limitations and economic conditions involved in manufacturing. Texts: Gray's *Electric Machine Design* and Hobart's *Dynamo Design.* Open to Seniors. Open to students who take or have taken Electrical Engineering 2A and 2B. *Both terms, two hours.* Professor DAGGETT.

5. Illuminating Engineering. The work of this course begins with a study of the physics of light, including an

experimental lecture by Professor Patterson, followed by three lectures on the physiological and psychological aspects of the subject by Professors Manning and Chase. Considerable time is then devoted to the subject of photometry, after which a study is made of modern sources of artificial light. Finally are considered the principles of design of interior and exterior illumination, especial attention being devoted to the conservation of the eyesight and the attainments of the highest efficiency consistent with the best artistic effect. Reference books: Barrow's *Light, Photometry and Illumination*, and Steinmetz' *Radiation, Light and Illumination*. Open to Seniors; prerequisite, Electrical Engineering 1. *Fall term, three hours.* Professor DAGGETT.

Laboratory fee, $3.00.

10. General Electrical Engineering. An advanced course in electrical theory, including the study of distributed inductance and capacity, transient phenomena, e. m. f. wave shapes in alternators and synchronous converters and the application of hyperbolic functions to the solution of problems in power transmission and telephone circuits. The work will be covered by lectures, reports on assigned reading and problems. Texts: Steinmetz' *Electric Discharges, Waves and Impulses,* and Kennelly's *The Application of Hyperbolic Functions to the Solution of Electrical Engineering Problems.* Prerequisites, Electrical Engineering 2A, 2B, 6 and 7, and Mathematics 3E or 6. *Both terms, three hours.* Professor DAGGETT.

11. Electrical Engineering Research and Design. The solution of one or more definite problems in some particular field of Electrical Engineering. The work of this course will be outlined, as far as possible, to suit the needs of the individual student, and will consist of original investigations, designs, or the economic study of some existing electric power plant. This course presupposes the completion of the work for the degree of S. B. in Electrical Engineering. *Both terms, three to six hours.* Professor DAGGETT.

DEPARTMENT OF ENGLISH

Candidates for the degree of Doctor of Philosophy who elect advanced work in the English language as their major subject will be expected to take courses in other Germanic languages. All graduate work in the English languages presupposes English 6, or its equivalent, and a reading knowledge of German.

6. Introductory Course in Old and Middle English: in the first term a careful study is made of Old English grammar and syntax: a large amount of easy Old English prose is read. Text: Bright's *Anglo-Saxon Reader.* In the second term the grammatical work and the reading are carried on into the Middle English period, with special attention to Chaucer. Texts: Greenlaw's *Selections from Chaucer;* Emerson's *Middle English Reader.* The aim of the course is to acquaint the student with the main facts of the beginning and development of the English language. The language of the older periods is considered in its relations to present day English; many points of confusion in modern English, unexplained by the rules of logical grammar, are made clear. Open to Juniors and Seniors. *Both terms, three hours.* Professor ROYSTER.

The attention of students electing this course is called to course 13 in the Department of Latin and to course 6 in the Department of German.

7. Advanced Course in Old English and Middle English: the work of the first term continues the study of Old English grammar, particularly in its relations to that of the other Indo-European languages, and takes up the reading of Old English poetry. A study of Chaucer's minor poems will be the basis of the work of the second term, 1915; prerequisite, English 6, or its equivalent. Open to Seniors. *Both terms, two hours.* Professor ROYSTER.

8. History of the English Language: This course supplements English 6. It will trace the growth of the English language from its beginnings in England until today. Junior and Senior elective. *Both terms, three hours.* Professor ROYSTER.

11. English Literature in the Age of Elizabeth. A study of the types of literature, except the drama: the pastoral; the sonnets and other lyrical poetry; the epic; prose fiction (both short story and novel); the essay. The relation between English and continental literature in the Renaissance. Open to Juniors and Seniors. *Both terms, three hours.* Professor GREENLAW.

12. English Classicism. The influence of the classical literatures and criticism from Sidney to Johnson; the pseudo-classic theories of literature and their influence on poetry and the Restoration drama; Milton, Dryden, Pope, Johnson, and their contemporaries. Open to Juniors and Seniors. *Both terms, two hours.* Professor GREENLAW.

This course alternates with English 4; to be omitted in 1914-1915.

DEPARTMENT OF GEOLOGY

[For description of Geological Laboratories, see page 228.]

4. Economic Geology: ore deposits, coal, oil and gas, clays, building stones, cement materials, fertilizers, underground waters, etc.; occurrence, methods of exploitation, production, and conservation of mineral resources; lectures, laboratory, and field work. Open to Juniors and Seniors; prerequisite, Geology 1 and Chemistry 1. *Both terms, three hours.* Mr. SMITH.

Laboratory fee, $1.00 a term.

5. Petrography: rocks and rock minerals, optical mineralogy, crystallography, etc.; lectures, laboratory work, and theses. Open to Juniors and Seniors. *Both terms, three hours.* Mr. SMITH.

Laboratory fee, $3.00 a term.

6. Advanced Field Work and Special Research in Geology and Geography: problems assigned individually and work adapted to the professional needs of the student. Students in this course are expected to keep Saturday open for field work. Open to Seniors. *Both terms, three hours.* Professor COBB.

9. Research Course in Historical Geology. *Both terms, three hours.* Professor COBB.

DEPARTMENT OF GERMANIC LANGUAGES

3. History of German Literature: lectures with parallel reading and written reports. Prerequisite, German 2A or 2B. Open to Juniors and Seniors. *Both terms, two hours.* Associate Professor BROWN.

To be omitted in 1914-1915.

4. Middle High German: Paul's *Mittelhochdeutsche Grammatik;* Bachmann's *Mittelhochdeutsches Lesebuch;* translation into New High German. Open to Juniors and Seniors; prerequisite, German 2A or 2B. *Both terms, three hours.* Assistant Professor RHYNE.

5. Old High German: Braune's *Althochdeutsche Grammatik;* Braune's *Althochdeutsches Lesebuch.* Open to Juniors and Seniors; prerequisite, German 2A or 2B. *Both terms, two hours.* Professor TOY.

6. Gothic: Braune's *Gotische Grammatik;* selected parts of Paul's *Grundriss der Germanischen Philologie.* This course is intended to lay the foundation for the philological study of the German dialects. Open to Juniors and Seniors. *Both terms, three hours.* Professor TOY.

7A. Goethe: Goetz von Berlichingen, Tasso, Dichtung und Wahrheit, Hermann und Dorothea. In connection with the interpretation of the texts, the life of Goethe will be studied. Selected chapters of Scherer's *History of German Literature,* Francke's *History of German Literature,* and Bielschowsky's *Goethe, Sein Leben und Seine Werke* will be read. Open to Juniors and Seniors; prerequisite, German 2A or 2B. *Both terms, two hours.* Associate Professor BROWN.

This course may be elected only after consultation with the instructor.

7B. Goethe's Faust, Parts I and II. Open to Juniors and Seniors; prerequisite, German 2A or 2B. *Both terms, two hours.* Professor Toy.

This course may be elected only after consultation with the instructor.

8. Introduction to Old Saxon. Holthausen's *Altsächsisches Elementarbuch.* Heliand (Behaghel). Prerequisite, German 2A or 2B and English 6. *Both terms, two hours.* Assistant Professor Rhyne.

DEPARTMENT OF GREEK

7. Greek Drama: Euripides, Iphigenia Among the Taurians; Sophocles, Œdipus Tyrannus; Æschylus, Agamemnon; Aristophanes, Wasps; Aristotle, Poetics. Open to Juniors and Seniors. *Both terms, three hours.* Professor Bain.

8. Prose Composition: advanced course. *Fall term, two hours.* Professor Bain.

11. Greek History: the selections from Greek historians in Parts I and II of Baumeister's *Quellenbuch zur Alten Geschichte. Both terms, two hours.* Professor Bain.

12. Bucolic Poetry: the Idylls of Theocritus, Bion, and Moschus. *Both terms, two hours.* Associate Professor Bernard.

17. Greek Epigraphy and Palæography: a brief introduction to the study of Greek inscriptions and manuscripts, lectures and reports. *Spring term, two hours.* Professor Bain.

The attention of students electing this course is called to course 14 in the Latin Department.

18. Critical Study of Special Authors: with lectures on Classical Greek Syntax, metres, dialects, oral and written translation into Greek, the history of Athens from the battle of the Arginusæ to the Restoration of the Democracy. *Both terms, three hours.* Professor Bain.

DEPARTMENT OF HISTORY

10. Civil War and Reconstruction: a detailed study of the constitutional, political, and economic phases of the period of the Civil War and Reconstruction; lectures, readings and reports. Open to Seniors. *Both terms, two hours.* Professor HAMILTON.

13. The American Constitution: research in the history of the Constitution of the United States. *Both terms, two hours.* Professor WAGSTAFF.

14. American Politics: lectures and research in the history of political parties of the United States. *Both terms, two hours.* Professor HAMILTON.

DEPARTMENT OF LATIN

5. Pliny: Selected Letters; Juvenal, Satires; Martial, selected epigrams; reading with special reference to the private life of the Romans at the close of the first century A. D. Open to Juniors and Seniors. *Both terms, two hours.* Professor HOWE.

This course alternates with course 9; to be given in 1914-1915.

9. Roman Elegiac Poets: rapid reading of selected elegies of Catullus, Tibullus, Propertius, and Ovid; a study of the lives of the elegists; the history of Greek and Roman elegy. Open to Juniors and Seniors. *Both terms, two hours.* Professor HOWE.

This course alternates with course 5; to be omitted in 1914-1915.

11. The Study of a Particular Author or Period in Roman Literature: practice in rapid reading, with translation of the more difficult passages only. *Both terms, two hours.* Professor HOWE.

12. Lectures on Comparative Syntax of Greek and Latin: principles illustrated from Homer and Terence. *Both terms, two hours.* Associate Professor WILSON.

14. Latin Epigraphy and Palæography: a brief introduction to the study of Latin inscriptions and manuscripts;

lectures and reports. *Fall term, two hours.* Professor HOWE.

The attention of students electing this course is called to course 17 in the Department of Greek.

DEPARTMENT OF MATHEMATICS

4. Calculus; Analytic Mechanics. Open to Juniors and Seniors; prerequisite, Mathematics 2. *Both terms, three hours.* Professor CAIN.

5. Theory of Equations (Burnside and Panton). Open to Juniors and Seniors. *Both terms, three hours.* Professor HENDERSON.

6. Differential Equations (Murray). Open to Seniors. *Both terms, three hours.* Professor HENDERSON.

7. Road and Railroad Surveying and Engineering. Open to Seniors. *Both terms, three hours.* Professor STACY.

7A. Hydraulics and Sanitary Engineering. Open to Seniors. *Both terms, three hours.* Professor STACY.

8. Mechanics of Engineering. Prerequisite, Mathematics 3A. Open to Juniors and Seniors. *Both terms, three hours.* Professor STACY.

10. Theory of Bridges. Prerequisite, Mathematics 8. Open to Seniors. *Both terms, four hours.* Associate Professor HICKERSON.

11. Retaining Walls and Dams; Arches. Senior elective; prerequisite, Mathematics 4. *Both terms, two hours.* Professor CAIN.

13. Design of Structures. To be taken in connection with Mathematics 10. *Both terms, three hours.* Associate Professor HICKERSON.

15. Advanced Differential and Integral Calculus. Prerequisite, Mathematics 4. *Both terms, two hours.* Professor CAIN.

17. Vector Analysis. Prerequisite, Mathematics 4. *Both terms, two hours.* Professor CAIN.

18. Modern Synthetic Geometry. Text: Russell. Prerequisite, Mathematics 4. *Both terms, three hours.* Professor HENDERSON.

19. Modern Analytic Geometry. Text: Smith, C. Prerequisite, Mathematics 4. *Both terms, three hours.* Professor HENDERSON.

DEPARTMENT OF PHILOSOPHY

5. Epistemology: a study of the Critical Philosophy; lectures, theses. First term: Prolegomena and Practical Reason and the works that prepared the way for Kant. Second term: *Kritik der reinen Vernunft. Both terms, three hours.* Professor WILLIAMS.

6. A Companion Course to Philosophy 4: The aim of the course is to sketch the forces masterful in modern life. Open to Juniors and Seniors. *Both terms, three hours.* Professor WILLIAMS.

DEPARTMENT OF PHYSICS

2. Modern Electrical Theory: the electron theory, electrolysis, conduction of electricity through gases, electric nature of matter, radioactivity. Prerequisite, Physics 1. Open to Juniors and Seniors. *Both terms, two hours.* Professor PATTERSON.

6. Heat and Thermodynamics. Prerequisite, Physics 1 and Mathematics 2. Open to Juniors and Seniors. *Both terms, two hours.* Professor PATTERSON.

DEPARTMENT OF ROMANCE LANGUAGES

3. French Literature: a general outline of its various periods; lectures, reading, reports. Prerequisite, French 2. Open to Juniors and Seniors. *Both terms, three hours.* Associate Professor TOWLES.

4A. French Literature in the Seventeenth Century: lectures, reading, reports. Open to Juniors and Seniors. *Both terms, three hours.* Associate Professor TOWLES.

This course alternates with course 4B; to be given in 1914-1915.

4B. French Literature in the Eighteenth Century: lectures, reading, reports. Open to Juniors and Seniors. *Both terms, three hours.* Professor DEY.

This course alternates with course 4A; to be omitted in 1914-1915.

5. French Literature in the Nineteenth Century: lectures, reading, reports. Open to Juniors and Seniors. *Both terms, three hours.* Professor DEY.

6. Old French: reading of the oldest texts: La Chanson de Roland; Aucassin et Nicolette; Chrétien de Troyes; lectures on French Phonology and Morphology. Prerequisite, French 2, a knowledge of Latin equivalent to courses 1 and 2 of the Latin Department, and a reading knowledge of German. *Both terms, two hours.* Associate Professor TOWLES.

7. Provençal: a study of the ancient language and literature of Provence. Prerequisite, course 6. *Both terms, two hours.* Professor DEY.

DEPARTMENT OF ZOOLOGY

[For description of Biological Laboratories, see page 227.]

2. Comparative Anatomy and Embryology of the Vertebrates; dissection of types, especially amphioxus, petromyzon, fish, fowl, mammal; early stages in embryology of ascaris, starfish; segmentation and formation of germ layers in teleost and frog; germ layers and development of characteristic vertebrate organs in chick; selected stages in development of mammal (rabbit, pig); fundamentals of microscopic technique; laboratory work with occasional lectures. Open to Juniors and Seniors. *Both terms, three hours.* Professor WILSON and Mr. GEORGE.

4. General Zoology: an advanced course for such as expect to teach or to carry on investigations in zoological, or allied medical, subjects. Laboratory work to cover anatomy, with some histology and embryology, of chief orders of animals, especially invertebrates; collecting trips; identification of forms; essentials of gross and microscopic photography; microscopic technique sup-

plementary to that of the usual courses in embryology and histology. Conferences and lectures dealing with morphology of groups, history of zoology, and with the theory of biology as deduced from facts of comparative and experimental study. Opens to Juniors and Seniors. *Both terms, five hours.* Professor WILSON.

5. Animal Morphology: detailed study of problems in microscopic anatomy and embryology, chiefly comparative, in part experimental; laboratory work with use of classical text-books and original memoirs; theses. *Both terms, five hours or more.* Professor WILSON.

PART THREE

PECUNIARY AID AND EXPENSES
MEDALS AND PRIZES
REGULATIONS

Pecuniary Aid and Expenses

FELLOWSHIPS AND SCHOLARSHIPS

The LeDoux Fellowship in Chemistry. (Established in 1911 by Dr. Albert R. LeDoux.) The holder is expected to devote himself to research in chemistry. This fellowship is endowed and yields $300 annually.

A Fellowship in Technical Chemistry, established in 1911, is offered to graduate students for research in technical chemistry. This fellowship yields $200 annually.

A Fellowship in Organic Chemistry is offered to graduate students for research in Organic Chemistry. This fellowship yields $300 annually.

The Library Fellowships, two in number, established in 1907, yield each $150 annually. The holders are expected to assist in the Library.

Three Teaching Fellowships, established in 1907, yield each $200 annually. The holders are expected to assist in the work of instruction in the departments to which the fellowships are assigned.

The Cameron Scholarships. (Established in 1892.) The heirs of Paul Carrington Cameron founded, in his memory, ten scholarships of the value of sixty dollars each.

The Dialectic and Philanthropic Literary Societies' Scholarships. (Established in 1893.) The Dialectic and Philanthropic Literary Societies of the University founded two scholarships of the value of sixty dollars each, recipients of which shall give assistance in the Library.

The Moore Scholarships. (Established in 1881.) Bartholomew Figures Moore, of Raleigh, bequeathed five thousand dollars, the interest of which shall be devoted to paying the tuition of students.

The Mary Ann Smith Scholarships. (Established in 1891.) Miss Mary Ann Smith bequeathed thirty-seven thou-

sand dollars for the foundation of scholarships, the number of scholarships to be determined by the amount of the income.

The Mary Ruffin Smith Scholarships. (Established in 1885.) Miss Mary Ruffin Smith bequeathed to the University, in memory of her brother, Dr. Francis Jones Smith, a valuable tract of land in Chatham county of fourteen hundred and sixty acres, known as Jones's Grove. The will provides that rents of the land, or the interest on the purchase money, if sold, shall be used to pay the tuition of such poor students as the Faculty shall appoint.

The Speight Scholarships. (Established in 1892.) The late Mrs. Mary Shepard Speight bequeathed ten thousand dollars to the University. The income shall be used to pay the tuition of needy students; but if tuition is ever made free, the income shall be used toward paying the salaries of the professors.

The Wood Scholarship. (Established in 1892.) Mrs. Mary Sprunt Wood, of Wilmington, has founded, in memory of her late husband, Dr. Thomas Fanning Wood, a scholarship of the value of sixty dollars.

The Weil Scholarship. (Established in 1898.) A fund established by Mr. Henry Weil, of Goldsboro, furnishes one scholarship of the value of sixty dollars.

The Armfield Scholarships. (Established in 1901 and 1904.) These scholarships are founded by the generosity of Mr. Eugene M. Armfield, of the class of 1888, High Point, N. C.

The Alumni Scholarships. These scholarships have been established by the gifts of Alumni. A scholarship will be awarded for each one thousand dollars given.

The Kenneth Murchison Scholarships. (Established in 1904.) These scholarships have been founded by Mrs. Shirley Carter, of Baltimore, Md., and Mrs. James Sprunt, of Wilmington, N. C., in memory of their father. They are awarded by the founders.

The Babbitt Scholarship. (Established in 1910.) This scholarship was founded by the Babbitt Corporation. It is

awarded annually by Professor Herty to that member of the incoming Senior Class who has made the best record in the Department of Chemistry. The holder of this scholarship is required to investigate during the Senior year some subject connected with the chemistry of the oleoresins. The scholarship yields annually $250.

None of these scholarships is open to students in the professional Schools of Law, Medicine, and Pharmacy.

All applications for scholarships must be filed in the President's office on or before August 15, and must be in the regular form prescribed by the University. Blank forms are supplied on application to the President.

FREE TUITION

By an act of the Legislature in 1887, free tuition is given to candidates for the ministry, to the sons of ministers, to young men under bodily infirmity, to teachers, and to young men preparing to teach. In order to secure this free tuition, young men preparing to teach must agree to teach in North Carolina for at least two years after leaving the University. This enables the University to aid effectively the public school teachers of the State.

LOAN FUNDS

The Deems Fund. (Established in 1879.) A fund of six hundred dollars was established by Rev. Charles Force Deems, D. D., late pastor of the Church of the Strangers, New York City, formerly a professor in the University, in memory of his son, Lieutenant Theodore Disosway Deems. In 1881 the gift was greatly enlarged through the munificence of Mr. William H. Vanderbilt, by a gift of ten thousand dollars, "as an addition to the Deems fund, to be loaned to indigent students of the University."

The Martin Fund. This fund has been established by the bequest of Mr. Thomas D. Martin, of Raleigh. Only the interest of the fund can be used for loans. It became available during the session of 1907-1908.

All applications for loans must be filed in the President's office on or before August 15.

Applications for loans will not be considered unless accompanied by testimony from responsible persons as to poverty and merit. The funds are limited in amount and are loaned only on the security of two approved signatures and at the legal rate of interest.

EXPENSES

Every effort is made to reduce to the lowest point the necessary expenses of an education at the University. The charges for each of the two terms are as follows:

Tuition fee	$30.00
Fee for Matriculation *	15.00
Total	$45.00

Students taking courses in the laboratories are charged a small fee for materials. Every student must keep on deposit with the Treasurer two dollars as security for damages. Willful damage to University property is charged to the perpetrator, if known; otherwise it is charged to the general deposit for damages. Any balance is returned to the student at the end of the year.

Excellent board is furnished at Swain Hall for twelve and a half dollars a month. A few students can earn their board by waiting on the tables. The entire annual expenses need not exceed three hundred dollars, and they may be reduced to two hundred dollars.

It is confidently believed that no institution offers wider opportunities for self help to meritorious students of slender means. The desire is that no worthy boy, however poor, shall ever be turned away for lack of means. To such the University and town offer unusual opportunities for support. Many students are now working their way through college by every form of honorable labor. A number are here as a result of money earned or borrowed. Seventy are aided by loans, and about five hundred have received aid from the University in loans and scholarships in the past twenty years. A few students are selected by the authorities as waiters at Swain Hall. Otherwise all opportunities available in the University and

* This fee includes also the gymnasium fee, the library fee, the fee for the attendance of the University physician and of the University nurse, and the fee for athletics.

town must be secured by the personal efforts of the individual, or with the assistance of the Faculty Committee on Self-Help. They are not assigned by the President.

DORMITORY ACCOMMODATIONS

The University buildings contain rooms available for the accommodation of something over three hundred students. There is no charge for service in addition to the rent. All rooms are fitted with electric lights. Room rent ranges from seventy-five cents to $6.00 a month for each occupant, the price depending upon the location of the room. Battle, Vance, Pettigrew, Smith, Carr, Old East, the Inn dormitories contain furnished rooms.

All the buildings of the University are heated by hot water according to the most improved methods. In the dormitories the charge for light and heat will be $2.00 a month for each room.

Medals and Prizes

The Colonial Dames Prize. (Established in 1908.) The North Carolina Society of Colonial Dames offers annually a first prize of fifty dollars and a second prize of twenty-five dollars for the best essays on some subject connected with the Colonial Period of North Carolina.

The Literary Essay Medal. (Established in 1890.) A gold medal is offered annually by Professor Thomas Hume to that member of the Senior Class who shall present the best essay or thesis on some distinctly literary subject.

The Mangum Medal in Oratory. (Established in 1878.) A gold medal founded by the Misses Mangum, late of Orange county, in memory of their father, Willie Person Mangum, is continued by his granddaughters, Mrs. Julian A. Turner, Mrs. Stephen B. Weeks, and Miss Preston Leach, and awarded to that member of the Senior Class who shall deliver the best oration at Commencement.

The Bingham Prize in Debate. (Established in 1899.) This prize is offered by Mr. R. W. Bingham in memory of his great-grandfather, grandfather, father, and brother. It is given annually for excellence in debate. The contestants are representatives of the Literary Societies, and the contest is held on Tuesday evening of Commencement week.

The Kerr Prize in Geology and Mineralogy. (Established in 1889.) A prize of fifty dollars is offered annually by Mr. William H. Kerr in memory of his father, Professor Washington Caruthers Kerr, to any undergraduate or graduate student, for the best thesis containing original work in the geology or mineralogy of North Carolina.

The Eben Alexander Prize in Greek. (Established in 1887.) A prize of ten dollars is offered annually to that member of the Sophomore Class who shall present the best rendering into English of selected passages of Greek not previously read.

The Worth Prize in Philosophy. (Established in 1883.) Mr. Charles Williams Worth, in memory of his father, David Easton Worth, of the class of 1853, will print the best thesis submitted by a student in Philosophy 4.

The Early English Text Society Prize. (Established in 1886.) A special prize is offered annually by the Early English Text Society, of London, for advanced work in Anglo-Saxon and Middle English.

The Bryan Prize. (Established in 1903.) A prize will be given annually by Mr. William Jennings Bryan for the best thesis in Political Science.

The Hunter Lee Harris Memorial. (Established in 1903.) Dr. Charles Wyche, of St. Louis, offers annually, in memory of Hunter Lee Harris, of the class of 1893, a gold medal for the best original story by any student in the University.

The Thomas Hume Prize. (Established in 1904.) A prize of fifty dollars is offered annually by Mr. W. G. Peckham, of New York, for the best work in the Old English Ballads and Shakespeare or Milton.

The William Cain Prize in Mathematics. (Established in 1908.) A gold medal is offered annually by Professor William Cain to that student who shall take the highest rank in Mathematics 4. No student will be recommended for the prize unless he attain to grade 2.

The Preston Cup, given by the Hon. E. R. Preston, in memory of his brother, Ben Smith Preston, will be awarded annually to the undergraduate student who during the months September to April has done the best work of a journalistic nature.

Certain prizes are offered also in the Professional Schools of Law, Medicine, and Pharmacy. For these, see under the several schools.

Regulations

REGISTRATION

All students are expected to present themselves for registration on *Monday, Tuesday,* or *Wednesday, September 7, 8,* or *9, 1914,* and *Monday* or *Tuesday, January 4* or *5, 1915,* between the hours of 9 A. M. and 4 P. M., at the office of the Registrar.

ARRANGEMENT OF COURSES

Every student, when he presents himself for registration, must submit a list of courses, required and elective, which he desires to pursue.

No student will be allowed to take less than 15 hours nor more than 18 hours of class-room work a week without special permission of the Faculty or of the President.

Students desiring to change their courses must make written application to the Committee on Courses for the desired change. The application will be considered by the committee and the instructors in the departments concerned and will be granted only after a careful consideration of the facts in each case. No changes will be permitted after the first Tuesday following the registration days except such as are granted after application to, and approval by, the Faculty.

Candidates for more than one degree shall not offer the same elective in two courses nor a required study in one course as an elective in another.

ASSIGNMENT OF ROOMS

The University buildings contain one hundred and sixty-five furnished double rooms, eight single furnished rooms, and eighty-two double unfurnished rooms available for the accommodation of students. These rooms are assigned to students by the Treasurer, at the beginning of each term, in the order of application.

The President reserves the right to require any student whom for any reason he considers an undesirable tenant to vacate a room in the University buildings.

All occupants are required to sign a contract subject to the following special rules:

In order to retain his room for the next session, a student must file with the Treasurer before May 20th a room contract properly signed. Double rooms must be signed for by both intending occupants. The rooms thus signed for will be retained until August 31st provided a deposit of $5 be paid by each intending occupant before August 15th. The $5 deposit will be forfeited in case the signer or signers do not themselves occupy the room and pay the full rent. Rooms not signed for or forfeited by failure to pay at the proper date will be assigned in the order of application. No dogs shall be kept in the University dormitories. Breach of this regulation leads to forfeiture of the room.

The right to occupy a room is not transferable and terminates with the expiration of the lease. Any attempt on the part of an occupant of a room to sell or transfer his right to occupancy shall be deemed a fraudulent transaction. The penalty of violating this rule shall be the forfeiture of the room by the new lessee.

The occupant of a room will be held directly responsible for any damage done to the furniture supplied in his room by the University.

CONDUCT

By order of the Board of Trustees the Faculty is directed to dismiss from the University any student who is known to engage in drinking intoxicating liquors, gambling, hazing in any form, (presence at hazing is regarded as participation), or to be guilty of dissolute conduct.

Students persistently neglectful of duty, or addicted to boisterous conduct or rowdyism, may be requested to leave the University.

ATTENDANCE

Regular attendance upon lectures and recitations is required of all students.

In any term, absences are counted from the first regular meeting of each class. In no case will a student be considered present at any class until he has been registered as a member of that class. No student will be allowed more than five unex-

cused absences during a month. When this number is exceeded he will be placed on probation, and notified that any further unexcused absences on his part during the next month may necessitate his withdrawal from college. This notice will be sent to his parents or guardian also.

Any student whose absences from a class during any month equal the number of scheduled meetings of the class for one week is required to stand a special examination on that month's work within the first two weeks of the succeeding month at an hour to be announced by the instructor. In the case of those whose absences in a given month reach the number indicated above, and who fail to stand the examination provided for such absences, it is left to the discretion of the instructor to retain them in his class.

Students who are absent from a class during the months of December, January, or May as much as 25 per cent. of the scheduled meetings of the class must stand an examination for these months before being entitled to any grade on the term examination. This special examination is to be held in connection with the regular term examinations, or at some time during the examination period.

Students who are absent during any term as much as 33⅓ per cent. of the scheduled meetings of the class, except in case of prolonged sickness necessitating at least half the absences, may at the discretion of the instructor be debarred from the term examination.

Attendance at Chapel is compulsory for all students in the University except for members of the professional departments and for such others as are specially excused. Absence from Chapel will subject the student to discipline by the Executive.

No student is allowed to absent himself from the University without written permission from the President or his representative. This permission may, at the discretion of the executive officer, be granted only upon the formal request of the parent or guardian.

EXAMINATIONS

Regular examinations on all subjects are held at the close of each term. Excuses from examinations are granted only in case of absolute necessity. Such an excuse, to be valid, must

be obtained from the President by the day of examination, and communicated officially to the instructor holding the examination.

Freshmen, Sophomores, and Juniors who have been excused from an examination or have received the grade 5 (see page 138) in any subject will be given one, and only one, opportunity to make good the deficiency by special examination. Examinations on the Fall term of a subject may be made good either in the following September, according to the schedule given below, or at the regular examinations of the next lower class in January. Examinations on the Spring term of a subject may be made good either in the following September, according to the schedule given below, or at the regular examinations of the next lower class in May. In case a student fails in the special examination, he must repeat the subject with the class of the succeeding year. If the unremoved condition be in an elective subject not offered for the succeeding year, the student must take another elective valued at the same number of hours.

Seniors who have been excused from an examination or have received the grade 5 in any subject at either the Fall or Spring examination will be given but one opportunity to make good the deficiency by special examination, viz., during the regular examination period of the three lower classes in May.

Papers handed in at special examinations by students who have been officially excused from the regular examination will be graded. All others will be marked either "passed" or "failed." Students who hand in papers at regular examinations are considered to have relinquished any claim to grades on special examinations.

Students who absent themselves from regular examinations without having obtained an official excuse, and those who are present at the regular examinations but do not hand in papers, are given the grade 6 (see page 138). They are required to repeat the subject with the next lower class, or, in case of an elective not offered in the succeeding year, to take another elective valued at the same number of hours.

A student wishing a special examination in any subject must deposit an application in the office of the Registrar at least one week before the beginning of the period of examinations.

Each student is required to subscribe his name to the follow-

ing pledge on every paper: *"I hereby certify that during this examination I have neither given nor received aid."* No paper without the pledge will be read.

The order of examinations for the removal of conditions in September, 1914, will be as follows:

Wednesday, September 2.

10 A. M.	Physics.	2:30 P. M.	Chemistry.
	Greek.		History.
			Economics.

Thursday, September 3.

10 A. M.	English.	2:30 P. M.	Zoology.
			Botany.

Friday, September 4.

10 A. M.	German.	2:30 P. M.	Mathematics.
	French.		

Saturday, September 5.

10 A. M.	Latin.	2:30 P. M.	Geology.
	Philosophy.		Education.

STANDING

Semi-annual reports of the standing of all students in all the studies of the previous term are sent to parents or guardians. The reports are based upon the following system of marking:

Grade 1, 95-100 per cent.
Grade 2, 90-95 per cent.
Grade 3, 80-90 per cent.
Grade 4, 70-80 per cent.
Grade 5, 60-70 per cent.
Grade 6, below 60 per cent.

Students must attain a grade of 4 to pass in any study. Grade 5 indicates that the student is conditioned, but may remove the deficiency by special examination, as explained on page 137. Students receiving grade 6 in any study must take such study again with the next lower class, or in case of an elective not offered in the succeeding years, must take another elective valued at the same number of hours.

A student who has failed on all the examinations of the year in any college study may not take a higher class in that department, until he makes good his deficiency.

A student to be ranked as a Sophomore must have passed twelve hours of work; to be ranked as a Junior, twenty-four hours; to be ranked as a Senior, forty-two hours.

No Freshman who fails to pass at least six hours, and no Sophomore or Junior who fails to pass nine hours shall be readmitted to the College the following year except by a special vote of the faculty or a delegated committee of the faculty.

In addition to the semi-annual reports, there are sent out during the session six monthly reports in which the standing of students is indicated in a general way.

CERTIFICATES

A certificate is granted to a student who has completed with credit, in any department except those of Mathematics, Chemistry, Physics, and Geology, all work required for a degree together with elective work in the same department. (For detailed statement of requirements, see under the several departments of instruction.)

GRADUATION

Each Senior will be officially informed by the Registrar in August of all deficiencies standing against him.

The number of orations in the contest for the Mangum Medal is limited to four. The candidates must be members of the College or the School of Applied Science, and must announce their subjects to their respective Deans by February 1. The orations shall be delivered in private before a committee of the Faculty on May 1, who shall decide upon the relative merits of the orations. The four successful candidates are known as the Commencement Orators of the Senior Class.

ATHLETIC AND OTHER ORGANIZATIONS

No student will be allowed to take part in athletic contests, concerts, debates, etc., entailing absence from the University, whose parent or guardian objects to such participation.

A student who was in attendance upon the University during a previous term or session must have passed satisfactory examinations upon at least eight hours of work before he will be

allowed to represent the University in any athletic contest or in any other public capacity.

No student reported as deficient in a majority of his classes may participate in any athletic contest or otherwise publicly represent the University, until the deficiency is made good.

No team or club will be allowed to be absent from the University for more than ten lecture days during the term.

The manager of each athletic team or musical club shall submit to the Athletic Committee or to the President a schedule of all engagements before positive arrangements are made.

The faculty regulations governing athletics are as follows:

1. No student whose parents or guardian object to his participation in athletic contests shall be allowed to take part in such contests.

2. No student shall play upon the University athletic teams except after physical examination by the Director of the Gymnasium (or by a responsible expert officer of the University acting in his stead and by his request) and with the approbation of the Director.

3. A student who was in attendance upon the University during a previous term or session must have passed satisfactory examinations upon at least eight hours of work before he will be allowed to represent the University in any athletic contest.

4. Inasmuch as a member of an athletic team of this University is a representative student and enjoys special honor in thus representing the University, this privilege shall be withheld from any student whose scholastic standing is discreditable. A preliminary report of the scholastic standing of the members of the football team shall be called for on October 15th, and of the baseball team on March 15th, and the players notified of their deficiencies. Another report shall be called for on November 15th for the football team and on April 15th for the baseball team, at which time any player deficient in a majority of his studies shall be debarred from representing the University during the remainder of the term.

5. The members of any athletic team may be allowed not more than ten lecture days leave of absence from the University for the purpose of engaging in athletic contests; but no student who is a member of more than one athletic team

shall be allowed more than twenty lecture days leave of absence during the entire session for such purpose.

6. The manager of each athletic team shall submit to the Faculty Committee on Athletics or to the President a schedule of all engagements before positive arrangements are made.

7. Before any student can become a member or a substitute member of any athletic team in the University and take part in any intercollegiate contests he must make application to the Faculty Committee on Athletics in the University and secure the endorsed approval of that Committee to his application. It shall be the duty of the Faculty Committee on Athletics to have the Executive officers of the University endorse such application to the effect that the applicant is a registered student of the University.

8. It shall be the duty of the Faculty Committee on Athletics to inquire into and make a record of the athletic experiences of the applicant, and it shall be the duty of the applicant to appear before the Committee and answer on his honor such questions as the Committee may see fit to ask.

9. It shall be the duty of the Faculty Committee on Athletics to require a pledge in writing of the applicant, certifying on his honor that he has never accepted, directly or indirectly, remuneration, compensatory gift, valuable consideration, or promise thereof, for his athletic services, and that he is in the proper and strict sense of the word an amateur player in collegiate athletic sports, before the Committee endorses his application.

10. It shall be the duty of the Graduate Manager, the Head Coach, the President and the Treasurer of the Athletic Association, the members of the Athletic Council, the Director of the Gymnasium, and the Manager and the Captain of the team concerned to furnish the Faculty Committee on Athletics, on request, a statement to the effect that each member of an athletic team is above their suspicion as to his eligibility to represent the University as an amateur player before such player shall be allowed to take part in any contest.

11. No student who has been a member of, or substitute*

* The term "substitute" is interpreted to mean a student who has taken part in two or more intercollegiate contests.

member of, the football or baseball team of another college† or University during the preceding college year‡ shall be permitted to become a member of either team of this University during his first session, with the following exception: Such student shall be eligible for these teams at this University if he shall have registered in this University not later than within one week after the opening of the preceding spring term, and shall have been a student here during the said term.

12. No person whose name appears in the catalogue list of officers of instruction and administration of the University, and who receives remuneration therefrom, shall be a member of any athletic team representing the University.

13. The maximum period of eligibility for baseball and football shall be four years. In estimating the period of eligibility the years of baseball and football shall both be taken into account; but in no case shall a player be charged with four years' athletic work, unless at least four calendar years have elapsed from the time he entered upon his first intercollegiate contest, omitting from the calculation any sessional intermission by non-attendance. In case the player does not participate in either baseball or football during a college session, such session shall not be counted, but if such player does play on either the baseball or football team during any intermediate session, this shall count as if the player had played on both teams during such session.

14. No student of this University shall be eligible for any athletic team who shall have played upon, or been a member or substitute member of any of the professional or league teams named in Classes A, B, C, and D, in the publication of the American Sports Company. To the list of professional teams thus prescribed shall be added all league teams in any state or states, which the leading university of such state or states declares professional and from which it debars its own players.

15. The Faculty Committee on Athletics is directed to assume responsible charge of the details of the athletic situation and to permit the playing of intercollegiate games with

† The term "college" is hereby interpreted to mean any college named in Table 28 of the Report of the U. S. Commissioner of Education of 1902, which has not fewer than 150 male students of collegiate grade recorded in the catalogue of the institution in question as students of the college year preceding the applicant's entrance into the University.

‡ The college year consists of one session divided into two terms.

such colleges only as express a general conformity with the code of rules adopted by this faculty. The term "general conformity" is interpreted to mean conformity in regard to period of residence, maximum period of eligibility, and amateur standing.

FRATERNITIES

Undergraduate students may join fraternities after registration in their Sophomore year. Fraternity men are not allowed to pledge Freshmen to join fraternities.

PART FOUR

THE SCHOOL OF LAW
THE SCHOOL OF MEDICINE
THE SCHOOL OF PHARMACY
THE SUMMER SCHOOL FOR TEACHERS
THE BUREAU OF EXTENSION

The School of Law

*Francis Preston Venable, Ph.D., D.Sc., LL.D., President.
Lucius Polk McGehee, A. B., Dean.

Lucius Polk McGehee, A. B., *Professor of Law.*
Patrick Henry Winston, *Professor of Law.*
Atwell Campbell McIntosh, A. M., *Professor of Law.*

The law school which developed into the Law School of the University was founded in 1843 at Chapel Hill as a private school by William H. Battle, then a judge of the Superior Court, later a Justice of the Supreme Court of the State. In 1845 Judge Battle was made Professor of Law in the University and it was provided that the degree of Bachelor of Laws should be conferred on those completing the prescribed two year course. From the records of the University, however, it seems that few degrees were actually conferred. For a long time the school maintained a certain independence of the University. The Professor of Law received no salary though he enjoyed the fees from his classes, and the students were not entirely subject to the discipline of the University.

In 1899 the school was completely incorporated into the University with the late Judge James C. MacRae, previously a Justice of the Supreme Court of North Carolina, as the first Dean of the Law School.

REQUIREMENTS FOR ADMISSION

For admission to the regular work of the school, students, unless they are "special students" as explained below, must have completed fourteen units of work. This amount of work is about equivalent to four years training in a high school. It is the same as the requirement for entrance to the Freshman class in the academic department of the University, and will be found explained on page 32-38 of the General Catalogue.

Students over twenty years of age who are not able to qualify as regular students may be admitted as "special students"

*Absent on leave 1913-1914.

upon presenting satisfactory evidence that they have received such training as will enable them to make profitable use of the opportunities offered in the school.

Seniors in the College will be admitted to take as electives courses selected, with the approval of the Dean, from the work of the law school.

The days for the registration of law students are the same as for the registration of students for the College. See the General Catalogue, page 134, or the University calendar.

Students who enter the School of Law for the Spring Term without having matriculated for the Fall Term, should present themselves for matriculation at the end of the Mid-Year examinations, as shown in the University Calendar in this Catalogue. Students, however, are advised to enter at the Fall Term, if it is possible.

DEGREE OF LL. B.

The degree of Bachelor of Laws (LL. B.) will be conferred upon students who have satisfactorily completed the entire courses prescribed for the Junior and Senior Classes of the Law School, and who satisfy the following conditions:

(*a*) Candidates must have completed academic courses equivalent to the work of the Freshman and Sophomore Classes in the University.

(*b*) Candidates must present satisfactory theses on legal subjects approved by the Dean.

(*c*) Candidates must have spent at least one year in residence at the University as students in the School of Law.

In the discretion of the Law Faculty, credit may be given to candidates for courses completed in other Schools of Law of recognized standing.

Plans have been considered for enlarging and lengthening the curriculum, and the Law Faculty has been authorized to formulate a three years' course of study for candidates for the degree of Bachelor of Laws. It is not considered wise to make this change at present, and it will be duly announced in the Catalogue.

DEGREES OF A. B. AND LL. B.

The University offers also the combined degrees of A. B. and LL. B. for the successful completion of the following requirements:

1. The courses in the College outlined below.
2. All academic work to be completed by the end of the last regular examination period of the Junior Year of the candidate.
3. The completion of all the courses in the School of Law prescribed for the LL. B. degree.
4. The presentation of a satisfactory thesis on a legal subject approved by the Dean of the School of Law.

Prescribed academic work:

FIRST YEAR	SECOND YEAR	THIRD YEAR
Eng. 1 (3)	Eng. 2 (3)	Econ. 1 (3)
Pub. Spkg. 1 (1)	Lat. 2 (3)	Philos. 1 (3)
Math. 1 (4)	Hist. 3 (3)	Eng. (3)
Lat. 1 (4)	Select one: Greek 2 (3) / French 2 (3) / Ger. 2 (3)	Hist. (3)
Select one: Greek 1 (4) / French 1 (3) / Ger. 1 (3)	Select one: Math. 2 (3) / Phys. 1 (3) / Chem. 1 (3)	Elective (3)
Hist. 1 (3)		

CERTIFICATES

Any student who has been in regular attendance in the School of Law and who has satisfactorily completed one or more courses is entitled to a certificate of attendance and standing.

NUMBER OF HOURS OF WORK REQUIRED OR PERMITTED

No student will be permitted to take more than eighteen hours of work weekly except with the special permission of the Faculty.

No student, unless he is also taking other courses in the University, will be permitted to take less than ten hours of work weekly, nor will a student taking less than ten hours weekly be considered as studying law within the rule of the Supreme Court requiring two years' study of law as a necessary preliminary of applicants for license to practice in North Carolina.

COURSES OF INSTRUCTION

The courses offered and the general order in which they are taken up are indicated in the following programme of studies which is arranged to cover two years, known as the Junior Year and the Senior Year. The method of instruction varies in the different courses. In some text-books and lectures with collateral reading of cases form the basis of work. In others the subject is developed directly from the study of selections of decided cases, and quizzes thereon.

Junior Year

FALL TERM

ELEMENTARY LAW: a general outline of the field of legal studies; Clark's *Elementary Law. Two hours a week.* Professor WINSTON.

CONTRACTS: the general principles of contract; Benjamin and Messing's *Cases on Contracts;* McIntosh's *Cases on Contract. Four hours a week.* Professor MCINTOSH.

PERSONS: Domestic relations, including husband and wife with marriage and divorce, parent and child, guardian and ward, infancy, insanity, drunkenness, and aliens; Woodruff's *Cases on Domestic Relations and the Law of Persons,* and selected cases. *Two hours a week.* Professor MCGEHEE.

BAILMENTS: bailments, carriers, telegraphs, and telephones; Goddard's *Cases on Bailments and Carriers. Two hours a week.* Professor MCINTOSH.

AGENCY: Mechem's *Cases on Agency. Two hours a week.* Professor MCGEHEE.

PROPERTY: a rapid outline of Personal Property, after which the study of Real Property is begun; lectures; Tiffany's *Modern Law of Real Property. Three hours a week.* Professor WINSTON.

SPRING TERM

CRIMINAL LAW: May's *Criminal Law,* with statutes and selected cases. *Two hours a week.* Professor WINSTON.

TORTS: Burdick's *Torts,* Mordecai and McIntosh's *Cases on Remedies. Three hours a week.* Professor MCINTOSH.

SALES: Erwin's *Cases on Sales. Two hours a week.* Professor MCGEHEE.

NEGOTIABLE INSTRUMENTS: Huffcut's *Cases on Negotiable Instruments,* and *The Negotiable Instrument Law. Two hours a week.* Professor MCINTOSH.

QUASI-CONTRACTS: lectures and selected cases. *One hour a week.* Professor MCGEHEE.

PROPERTY: the law of Real Property as presented in Tiffany's *Modern Law of Real Property* is completed. *Three hours a week.* Professor WINSTON.

PLEADING AND PRACTICE: a study of remedies and pleading, which continues throughout the remainder of the student's course, is begun. This term is devoted to common law remedies and common law pleading. Textbook to be announced. *Two hours a week.* Professor MCGEHEE.

Senior Year

FALL TERM

CONSTITUTIONAL LAW: McClain's *Cases on Constitutional Law* and selected cases; lectures. *Four hours a week.* Professor MCGEHEE.

EQUITY: Bispham's *Principles of Equity. Three hours a week.* Professor WINSTON.

EVIDENCE: Hughes on *Evidence,* selected cases. *Three hours. a week.* Professor MCINTOSH.

INSURANCE: Richard's *Cases on Insurance. Two hours a week.* Professor WINSTON.

FEDERAL COURTS: The United States Courts Cases; the study of the law and procedure in selected topics; Hughes on *Federal Jurisdiction. One hour a week.* Professor MCINTOSH.

PLEADING AND PRACTICE: pleading under the American code system. *North Carolina Code of Civil Procedure;* lectures. One meeting of the class each week is devoted to the preparation of actual pleadings and other practice forms. *Three hours a week.* Professor MCGEHEE.

SPRING TERM

PRIVATE CORPORATIONS: Clarke on *Corporations*, with cases. *Three hours a week.* Professor MCGEHEE.

*PUBLIC CORPORATIONS: Macy's *Cases on Municipal Corporations. Two hours a week.* Professor MCINTOSH.

*BANKRUPTCY AND INSOLVENCY: Assignment for Benefit of Creditors, Creditor's Remedies, and the Federal Bankruptcy Act; lectures, selected cases. Students' Remington on *Bankruptcy. Two hours a week.* Professor MCINTOSH.

PARTNERSHIP: Mechem's *Cases on Partnership. Two hours a week.* Professor WINSTON.

*SURETYSHIP: Bunker's *Cases on Suretyship. One hour a week.* Professor WINSTON.

Alternates with Conflict of Laws. To be given in 1914.

WILLS AND ADMINISTRATION: Costigan's *Cases on Wills and Administration. Two hours a week.* Professor WINSTON.

*CONFLICT OF LAWS: lectures and cases. *One hour a week.* Professor MCINTOSH.

Alternates with Suretyship. To be omitted in 1914.

*ADMIRALTY: Hughes on *Admiralty. One hour a week.* Professor MCINTOSH.

PRACTICE AND PROCEDURE: a continuation of the work of the first term with especial reference to equity pleading and extraordinary remedies. *Three hours a week.* Professor MCGEHEE.

* From the subjects marked with an asterisk the student may omit a course or courses amounting to two hours of work weekly, devoting the time gained to the preparation of his thesis.

SCHEDULE OF LAW RECITATIONS

Senior Studies in CAPS; Junior in small type

	8:30	9:45	10:40	11:35	12:30
Fall	Bailments	CONST. L.	FED. CTS.	Agency	EVIDENCE
MONDAY					
Spring	Bills & Notes	PRIV. CORP	PLEAD.	Sales	BANKRUPTCY
Fall	PLEAD.	EQUITY	Contracts	Property	CONST. Law
TUESDAY					
Spring	PLEAD.	PART'SHIP	Torts	Property	MUN. CORP.
Fall	Elem. Law	CONST. L.	Persons	INSURANCE	Contracts
WEDNESDAY					
Spring	Crim. Law	PRIV. CORP.	Quasi-Contr.	WILLS	BANKRUPTCY
Fall	PLEAD.	EQUITY	Contracts	Property	EVIDENCE
THURSDAY					
Spring	PLEAD.	SURETYS'P	Torts	Property	ADMIRALTY
Fall	Elem. Law	CONST. L.	Persons	INSURANCE	Agency
FRIDAY					
Spring	Crim. Law	PRIV. CORP.	Plead	WILLS	Sales
Fall	Bailments	EQUITY	Contracts	Property	EVIDENCE
SATURDAY					
Spring	Bills & Notes	PART'RSHIP	Torts	Property	Mun. CORP.

MOOT COURT

A Moot Court for practice in the preparation of pleadings, the argument of law points, and the actual conduct of trials is a feature of the school. It is conducted by the students with the assistance and co-operation of the Faculty. The court meets weekly, a member of the Faculty presiding.

ADDITIONAL OPPORTUNITIES OF UNIVERSITY LIFE

Students in the Law School will be admitted without additional expense to the courses given in the Departments of economics and of History in the College of Liberal Arts and to the courses in Public Speaking and English, subject to the rules stated as to the number of hours which a student may take. A

student taking such a course must satisfy the entrance requirements for the course selected.

Students of the School may become members of the Dialectic and Philanthropic Literary Societies, where they may take part in or witness debates of a high order and train themselves in parliamentary law. As students of the University they enjoy all the privileges of the University library, the University gymnasium, and the organizations of the University generally, literary, social, and athletic.

THE LAW LIBRARY

The law library is housed in the Law Building and contains about 4,000 volumes. The annual revenue of a fund raised by the former students and friends of the late Professor John Manning, LL. D., who presided over the School for many years, is devoted to the purchase of books for the library. Free access to the Library is allowed to the students of the School, though they are not permitted to take the books from the building.

PRIZES

THE HENRY R. BRYAN PRIZE: Mr. Shepard Bryan of the Atlanta Bar offers annually, in honor of his father, the Honorable Henry R. Bryan of Newbern, N. C., a set of Cooley's Insurance Briefs to that member of the Senior Law Class who shall submit the best thesis upon an approved legal subject.

CALLAGAN & COMPANY, LAW PUBLISHERS, CHICAGO, PRIZE: A set of Andrew's American Law is offered by the publishers to that member of the Senior Class who obtains the best general average in his work for the year.

FEES AND EXPENSES

Tuition for Fall and Spring terms, each	$35.00
Registration fees	15.00

There are no scholarships in the School. Good board is furnished at Swain Hall for $12.50 a month. In the village board without rooms may be secured for from $10 to $16.50 a month.

The rent of rooms in the dormitories ranges from seventy-five cents to $6.00 a month, for each occupant; and for each

room a charge of one dollar a month is made for electric light and one dollar a month for heat.

ADMISSION TO THE BAR OF NORTH CAROLINA

Admission to the bar of North Carolina is under the direct control of the Supreme Court of the State. The rules of the Court as to the examination and licensing of applicants are given on page 157. Where circumstances and means permit, the reading should be done at a regular school of law. But the requirements of the rule may be satisfied by private reading. Students who have read law for a year privately or in a law office may, by attending the school for one year, beginning either in September or January, and by attending a term of the summer school, have an opportunity to study or review the course required by the Supreme Court of applicants for license.

To do this it will be necessary for such students to select, with the approval of the Faculty, subjects from the regular courses of both the Junior and Senior years. Such a course is not advised or approved except in cases where limited means render it a regrettable necessity. Two years spent in systematic study under competent instructors is a minimum period for mastering even the elements of so wide, complicated, and technical a subject as the law. The student should remember that he is preparing for his life-work, and only detriment to that life-work can in general result from a feverish anxiety to cut short the period of preparation and to abridge the studies which experience has marked out for the acquisition of the necessary qualifications.

THE SUMMER LAW SCHOOL

A session of the School of Law extending over a period of ten weeks is maintained during each summer, during which is provided a review of the course prescribed by the Supreme Court of North Carolina for applicants for license, and an opportunity for instruction for men who cannot become resident students during the scholastic year.

SESSION

The term for the summer of 1914 begins June 18 and ends August 28, three days prior to the examination before the Supreme Court for admission to the Bar of North Carolina.

LECTURES AND RECITATIONS

At this session two daily lectures and recitations of one hour and a half each will be held by two professors of the Law Faculty. In addition there will be frequent quizzes. The two courses offered are intended to cover the requirements for reading prescribed, given below, in the rules of the Supreme Court of North Carolina. The instruction is conducted by means of text-books, lectures, leading cases, quizzes, and moot court.

An outline of the work and of the time assigned to the various subjects is approximately as follows:

Domestic Relations (6 lectures); Contracts (18 lectures); Torts (12 lectures); Corporations (6 lectures); Evidence (6 lectures); Pleading and the Code (12 lectures); Criminal Law (8 lectures); Personal Property (6 lectures); Real Property (20 lectures); Executors and Administrators (6 lectures); Equity (9 lectures); Constitutional Law (9 lectures); Legal Ethics (2 lectures).

The text-books used will be, as far as possible, those used at the regular session of the school, but any standard text-book on any of these subjects will be accepted.

EXAMINATIONS

No entrance examination is required; but each student must satisfy the faculty that he has sufficient general education to enable him to take the course with profit to himself. Examinations are required as each subject is completed, and at the end of the term certificates to that effect are issued to such students as have passed with credit all examinations in both courses. These certificates will not entitle the recipients to any credit in the work of the regular school.

FEES AND EXPENSES

Tuition for term	$30.00
Registration and Incidental Fees	5.00

The above mentioned fees cover privileges of the University library, gymnasium, and baths. Board in the village, with room, will cost from $10 to $20 a month; without room, from $10 to $15.

For further information address the President of the University or the Dean of the School of Law, Chapel Hill, N. C.

RULES OF THE SUPREME COURT OF NORTH CAROLINA AS TO ADMISSION TO THE BAR.

1. Applicants for license to practice law will be examined on the first Monday in February and the last Monday in August of each year, and at no other time. All examinations will be in writing.

2. Each applicant must have attained the age of twenty-one years or will arrive at that age before the time for the next examination, and must have studied: Ewell's Essentials, 3 vols.; Clark on Corporations; Schouler on Executors; Bispham's Equity; Clark's Code of Civil Procedure; Volume 1, Revisal (1905) of North Carolina; Constitution of North Carolina; Constitution of the United States; Creasy's English Constitution; Sharswood's Legal Ethics; Sheppard's Constitutional Text-book; Cooley's Principles of Constitutional Law. *Or their equivalents.*

Each applicant must have read law for two years at least, and file a certificate of good moral character, signed by two members of the bar who are practicing attorneys of this Court, and also a certificate of a Dean of a Law School, or of a member of the bar of this Court that the applicant has read law under his instruction or to his knowledge or satisfaction, for two years, and upon examination by said instructor has been found competent and proficient in said course. Such certificate, while indispensable, will, of course, not be conclusive evidence of proficiency. An applicant from another state can file a certificate of good moral character signed by any State officer of the state from which he comes. * * * *

3. Each applicant shall deposit with the clerk the sum of $23.50 for the license and the clerk's fee before he shall be examined. * * *

The School of Medicine

FACULTY

*Francis Preston Venable, Ph.D., D.Sc., LL.D., President.
Isaac Hall Manning, M. D., Dean.

Charles Staples Mangum, A. B., M. D., *Professor of Anatomy.*

Isaac Hall Manning, M. D., *Professor of Physiology.*

William DeBerniere MacNider, M. D., *Professor of Pharmacology.*

James Bell Bullitt, A. M., M. D., *Professor of Histology and Pathology.*

Robert Baker Lawson, M. D., *Associate Professor of Anatomy.*

Auley McRae Crouch, *Assistant in Anatomy.*

Henry Frank Starr, *Assistant in Histology.*

Adolphus Bart Greenwood, A. B., *Assistant in Pharmacology.*

Henry Van Peters Wilson, Ph. D., *Professor of Zoology.*

Edward Vernon Howell, A. B., Ph. G., *Professor of Pharmacy.*

Charles Holmes Herty, Ph. D., *Smith Professor of General and Industrial Chemistry.*

William Chambers Coker, Ph. D., *Professor of Botany.*

Andrew Henry Patterson, A. M., *Professor of Physics.*

Alvin Sawyer Wheeler, Ph. D., *Professor of Organic Chemistry.*

James Munsie Bell, Ph. D., *Professor of Physical Chemistry.*
William Lewis Jeffries, A. M., *Instructor in Chemistry.*
John Grover Beard, Ph. G., *Instructor in Pharmacy.*
Vivian Leroy Chrisler, A. M., *Instructor in Physics.*
Wesley Critz George, A. M., *Instructor in Zoology.*
Henry Roland Totten, A. B., *Assistant in Botany.*

* Absent on leave 1913-1914.

Frank Davies Conroy, *Assistant in Chemistry.*
Victor Aldine Coulter, B. S., *Assistant in Chemistry.*
William Augustus Rudisill, B. S., *Assistant in Chemistry.*
Jackson Townsend, A. B., *Assistant in Chemistry.*
William Renny Harding, *Assistant in Physics.*

HISTORICAL SKETCH

The School of Medicine was established in 1879 and Dr. Thomas W. Harris was chosen to direct its work. A course of two years was offered in theoretical and practical medicine, but owing to the limited facilities this plan was not found practicable and was abandoned in 1886. In 1890, however, the School was re-opened and, under the direction of Dr. R. H. Whitehead, a course of one year, embracing only the elementary subjects—Anatomy, Chemistry, Physics, Physiology, etc. —was offered. As the requirements leading to the degree of Doctor of Medicine were increased by the leading medical colleges, the course was extended to embrace the first two years of the four year curriculum. In 1902 a Clinical Department was established at Raleigh, but since the funds for a proper equipment could not be provided, this was abandoned in 1909. In 1898 the School was admitted to membership in the Association of American Medical Colleges, and in 1901 was incorporated as an integral part of the University, on the same footing as the Graduate and the other professional schools.

COURSES OFFERED

The following courses are offered:

1. A Preparatory or Pre-medical Course: a course of one year of college work in which special attention is given to Chemistry, Physics, and Zoology. This is the minimum requirement for admission to the Medical School.

2. A Combined Course Leading to the Degree of Bachelor of Science: This consists of a prescribed college course of two years and the medical course of two years. On completing this four year course the School of Applied Science offers the degree of Bachelor of Science. The student is therefore able to obtain the

scientific degree and the degree of Doctor of Medicine in six years.

3. The Medical Course: The American Medical Association, the Association of American Medical Colleges, and other medical organizations recommend for the degree of Doctor of Medicine a graded course of four years in a medical school. They also suggest an arrangement of subjects in which the so-called laboratory subjects are to be given in the first two and the clinical subjects in the last two years. The medical course covers the subjects of the first two years. On completing the course a certificate is given which is accepted in full by most of the medical schools.

THE CURRICULUM

Preparatory or Premedical Course

Zoology 1, 3 hrs.
Physics B, 6 hrs.
Select one { German 1, 3 hrs. / or / French 1, 3 hrs.
Chemistry 1, 3 hrs.
Chemistry 3A, 1½ hrs.
Chemistry 4A, 1 hr.
History of Med. 1 hr.

The Combined Course: College Studies

FIRST YEAR	SECOND YEAR
English 1, 3 hrs.	English 2, 3 hrs.
Mathematics 1, 4 hrs.	Physics 1, 3 hrs.
Chemistry 1, 3 hrs.	Zoology 1, 3 hrs.
Botany 1, 3 hrs.	Chemistry 3A, 1½ hrs.
Select one { German 1, 3 hrs. / French 1, 3 hrs. / Latin 1, 4 hrs.	Chemistry 4A, 1 hr.
	Select one { German 1 or 2, 3 hrs. / French 1 or 2, 3 hrs. / Latin 1, 4 hrs.
	Select one { Drawing 1, 2 hrs. / History 1, 3 hrs. / Physics 4, 2 hrs.

In the College of Liberal Arts two hours of laboratory work are counted as one hour. In the premedical course and in the combined course this system is followed. In the medical curriculum two hours of laboratory work are counted as two hours.

The Medical Course

FIRST YEAR

Biological Chemistry (Chem. 10): *Six hours a week until April 1.*

Toxicology (Chem. 9) : *Six hours a week from April 1 to the end of the term.*

Comparative Anatomy (Zoology 2A).—*Six hours a week, fall term.*

Human Anatomy.—*Ten hours a week, fall term; fifteen hours a week, spring term.*

Histology.—*Nine hours a week, fall term.*

Embryology.—*Six hours a week, spring term.*

Pharmacy.—*Six hours a week, spring term.*

SECOND YEAR

Human Anatomy.—*Nine hours a week, fall term.*

Neurology.—*Six hours a week, fall term.*

Bacteriology.—*Nine hours a week, fall term.*

Physiology.—*Five hours a week, fall term; ten hours a week, spring term.*

Physiological Chemistry.—*Six hours a week, fall term.*

Pathology.—*Twelve hours a week, spring term.*

Pharmacology.—*Ten hours a week, spring term.*

Minor Surgery and Physical Diagnosis.—*Four hours a week, spring term.*

SUMMARY OF FIRST AND SECOND YEARS

Subjects	*Hours*
Chemistry	288
Anatomy	868
Physiology	255
Bacteriology	144
Pathology	200
Pharmacology	167
Pharmacy	90
Minor Surgery and Physical Diagnosis	60
Total	2072 hours.

ENTRANCE REQUIREMENTS

I. Requirements for admission to the Pre-medical and Combined Courses. The requirements for admission to the pre-medical and combined courses are fourteen units (corres-

sponding to a course of four years in the High School), of which eight units are prescribed and six are elective. The prescribed units are as follows: English 3 units, Mathematics 2 units, American history and civics 1 unit, foreign language (Latin, Greek, German, or French) 2 units. The elective units may be selected from the following: English language and literature 1 to 2 units; foreign language 1 to 4 units; natural science, physics, chemistry (one year each), biology, zoology, botany, physiology (one-half year each) ½ to 2 units; physiography, ½ unit; history 1 to 3 units; drawing 1 unit.

Candidates should present at least two units of German or French since they are required for admission to German 1 or French 1 in the pre-medical course. Equivalent courses are offered in the Summer School of the University. In the event of a failure to present such units for admission the student will be required to take German B or French A in the pre-medical course and German 1 or French 1 in the first year of the medical course.

At the discretion of the Committee on Entrance Certificates candidates may be admitted with conditions, provided the total number of units offered does not fall below a minimum of 12 units, and provided the conditions are of such nature that, in the judgment of the Committee, they may be removed on or before September of the following year. Provision is made for the removal of conditions in a limited number of subjects during the Summer School.

II. Requirements for Admission to the Medical Course. The requirements for admission to the medical course are one year of college work, embracing the following subjects: Chemistry, Biology, Physics, and German or French, the equivalent of the premedical course as outlined on page 160.

Candidates may be admitted with two conditions, one in language and one in science when, in the judgment of the Dean, the conditions may be carried without detriment to the medical course and may be removed on or before September of the following year.

III. Admission to Advanced Standing. Candidates for admission to the second year of the medical course must present certificates from an accredited medical school stating that they have had the required fourteen units, the year of college work

as indicated in Section II, and have completed the subjects of the first year of the medical course as outlined on page 160. Candidates may be admitted with not more than two conditions when, in the judgment of the Dean, the conditions may be carried without detriment to the medical course and may be removed on or before February of the same year.

EXAMINATIONS

Regular examinations are held during the two regular examination periods of the College of Liberal Arts. Special examinations will be given for the purpose of making up deficiencies during Registration Week. A fee of $5.00 will be charged each applicant for an examination at any other time. An examination will not be allowed if the student is charged with ten per cent of unexcused absences or with absences amounting to twenty per cent. of the total number of hours assigned to the subject.

CERTIFICATES

A certificate will be granted to a student who completes satisfactorily the required preliminary work and the medical course. In the event of a failure to complete the work a statement indicating the subjects completed will be given. No credits will be allowed for attendance only.

EQUIPMENT

The new medical building, Caldwell Hall, completed in 1912, is located on the south side of Cameron Avenue opposite Davie Hall, facing north. This location secures the north light in all of the laboratories used for microscopic work.

To the north is the main building, 117 x 64, and adjoining this, to the south, is a wing, 63 x 36, each containing a basement and two floors. The first floor of the main building is bisected from north to south by an entrance hall 14 feet wide, and from east to west by a corridor 8 feet wide, dividing the floor space into four equal parts. Each part is subdivided into one large class laboratory, 34 x 27, and two private laboratories, 14 x 12½. The class laboratories lie next to the entrance hall. Those on the north side will be used for microscopic work in Histology and Embryology. They are lighted from five large windows on the north side. On the south side

are the laboratories for Physiological Chemistry and Experimental Physiology.

The private laboratories, located on the farther side of the class laboratories, are occupied by the instructors. The office of the Dean is in one of the private laboratories on this floor and may be entered from the west end of the corridor.

The second floor is a duplicate of the first floor with the exception that the space above the entrance hall is enclosed and is used for the Departmental Library. On the north side are the Bacteriological and Pathological laboratories, and on the south side the Pharmacological laboratory and a lecture room. The laboratories here have the same arrangement as those on the first floor. Nearly opposite the Pathological laboratory is the Pathological Museum.

At the ends of the corridor on the first and second floors are small fire proof rooms which will be used for incubators, thermostats, and other purposes requiring the continuous use of oil or gas lamps.

In the basement of the main building provision is made for the care of animals. The floors of the several apartments are covered with cement and are inclined to a common drain pipe. The rooms are well ventilated, lighted, and heated, and provided with all necessary facilities for proper sanitation.

On the first floor of the wing adjoining the main building is the main lecture hall, and in the rear of this is the amphitheatre for anatomical demonstrations. In the rear of the amphitheatre is the Anatomical Museum.

On the second floor of the wing are the anatomical laboratories. In the centre, and occupying a large part of the floor space, is the main dissecting hall, which has a cement floor and is lighted by six large windows and two skylights. On either side of a short corridor at the front are two private laboratories for special dissections, and at the end of the corridor the two laboratories for the instructors. The latter are entered from the upper hall of the main building. In the rear of the main dissecting hall are the lavatory and locker rooms.

The basement of the wing is divided by a solid brick wall from east to west. On the north of this wall are the store rooms, a photographic room, a room for the refrigerating and gas plants; on the south side are the storage tanks for cada-

vers, the incinerator, and other arrangements for the care of anatomical material. In the rear end of the basement is an entrance hall containing the elevator and the stairs leading to the amphitheatre and the dissecting hall. The building is heated from the central heating plant and abundantly supplied with water and electric light. The dissecting hall is supplied with hot and cold water.

The laboratories are well equipped with apparatus for the use of the students and the research work of the teachers. Animals are available in adequate numbers for all proper experimental work.

The Departmental Library contains approximately three thousand volumes. The more important periodicals pertaining especially to the subjects offered in the course are received regularly and kept on file.

The medical students have free access to the general Library, the Chemical, Physical, and Biological laboratories, which are described in Part Five of the general catalogue.

THE GENERAL PLAN OF INSTRUCTION

In the arrangement and conduct of the courses an effort is made to follow modern ideals in medical education. A year of college training in Chemistry, Physics, and Zoology is insisted upon as the minimum preparation for the study of medicine. In order, however, to encourage a more thorough preparation, the degree of Bachelor of Science is offered to those students who complete a prescribed college course of two years and the two years of the medical course. In offering this degree the value of a properly directed college course of four years is not minimized, but on the contrary is earnestly recommended.

In the arrangement of the course of studies the attempt is made to have the subjects follow in natural sequence. Elementary courses in General Chemistry, Physics, and Zoology having been completed in the pre-medical year, more advanced courses in these subjects are pursued. In the first year Organic Chemistry, and Comparative Anatomy, with special reference to the requirements of the medical student, Gross Human Anatomy, Histology, Embryology, and an elementary course in Pharmacy are studied. In the second year Human Anatomy, Physiological Chemistry, and Bacteriology are completed in the first

half; Materia Medica and Pharmacology, Pathology, and Normal Physical Diagnosis in the second half. Physiology is begun and completed in the second year. At the expiration of the two years the student will have completed the fundamental branches of medicine, and will be prepared to enter upon the study of the more practical subjects.

In the plan of instruction the laboratory method, supplemented with systematic lectures and demonstrations, is pursued. The lectures and the laboratory courses are given contemporaneously as far as possible, for it is believed that the student, in this way, not only acquires technical skill, but a more thorough knowledge of the subject.

When advisable the classes are divided into small sections so that the work of the students is under the direct supervision and close observation of the instructor. Frequent oral and written quizzes and a final examination are required in each subject, and in the laboratory courses each student is required to record the observations in a note book, which must be submitted from time to time to the instructor and is held for a part of the final grade.

Regular attendance upon all classes is required of each student. A student who is absent twenty per cent. of the total number of hours assigned each subject, or is charged with ten per cent. of unexcused absences, is denied the privilege of an examination in the subject in which the absences occur.

EXPENSES

The following are the charges a term payable at the beginning of each term in September and January respectively:

Tuition	$35.00
Fee for matriculation (registration, etc.)	15.00
Total	$50.00

In addition the following fees will be charged for laboratory courses a term:

Chemistry 3A, $7.50; Chemistry 4A, $4.00; Chemistry 10, $5.00; Physiological Chemistry, $5.00; Zoology 1, $3.00; Zoology 2, $5.00; Botany 1, $3.00; Experimental Physiology, $5.00; Experimental Pharmacology, $5.00; Pharmacy, $5.00;

Bacteriology, $2.50; Pathology, $2.50; for the use of a microscope, $1.00.

The laboratory fees are divided approximately equally among the four terms. The total charge is between $60.00 and $63.00 a term.

Good board is furnished at Swain Hall for $12.50 a month. In the village board without rooms may be secured for from $10.00 to $16.50 a month. The rent of rooms in the dormitories ranges from seventy-five cents to $6.00 a month for each occupant. For each room a charge of $2.00 a month is made for electric light and heat.

PRIZES AND SCHOLARSHIPS

THE WOOD SCHOLARSHIP. (Established in 1895.) Mrs. Mary Sprunt Wood, of Wilmington, has founded, in memory of her husband, the late Dr. Thomas Fanning Wood, a scholarship, covering the tuition and fees.

COURSES OF INSTRUCTION

History of Medicine

1. A condensed outline of the evolution and development of Medicine and Surgery. Required of students in the pre-medical course. *Both terms, one hour.* Professor MACNIDER.

Chemistry

1. General Descriptive Chemistry: Pre-medical: the elements are studied in a systematic manner; the laws governing their combination and the compounds resulting are considered with appropriate reference to their occurrence and relationships to medicine. The latter part of the course is taken up with organic chemistry. Texts: McPherson and Henderson's *General Chemistry;* Remsen's *Organic Chemistry. Both terms, three hours.* Professor HERTY and Messrs. JEFFRIES, RUDISILL, and TOWNSEND.

Laboratory fee, $1.25 a term.

3A. Qualitative Analysis: Premedical: laboratory work with lectures; practice is given in the analysis of known

and unknown mixtures. Required. *Fall term, three hours.* Professor WHEELER and Mr. COULTER.

Laboratory fee, $7.50.

4A. Quantitative Analysis: Pre-medical: a brief course in gravimetric methods followed by a more extended course in volumetric methods. Required. *Spring term, two hours.* Professor BELL and Mr. COULTER.

Laboratory fee, $4.00.

5. Organic Chemistry: lectures and laboratory work. Prerequisite, Chemistry 1 and 3. Elective. *Both terms, three hours.* Professor WHEELER.

Laboratory fee, $4.00 a term.

5A. Organic Chemistry: laboratory work chiefly. This course is designed to give further practice in dealing with organic compounds. Elective. Prerequisite, Chemistry 5 or 10. *Both terms, two hours.* Professor WHEELER.

Laboratory fee, $6.00 a term.

9. Toxicology: laboratory work; the chemical behavior of poisons and their separation from foods and organs are studied in the laboratory. Text: Autenrieth and Warren's *Detection of Poisons.* Required. *Spring term after April 1, three hours.* Professor WHEELER and Mr. CONROY.

10. Biological Chemistry: lectures and laboratory work. Part I. A general survey of Organic Chemistry and the synthetic preparation of compounds of special interest to medical men.

Part II. A more detailed study of the fats, carbohydrates, and proteins, including laboratory work. Text: Haskin's *Organic Chemistry. Fall term and Spring term to April, three hours.* Professor WHEELER and Mr. CONROY.

Laboratory fee, $5.00 a term, including Chemistry 9.

Physics

B. Elementary Physics for medical students: the fundadamental facts of Physics are studied with some special attention to heat, light, and electricity. Text-

book, lectures, and laboratory work. *Both terms, six hours.* Professor PATTERSON and Messrs. CHRISLER and HARDING.

Certificates of Physics work done elsewhere than in a college of approved standing will not be accepted in lieu of this course.

Laboratory fee, $2.00 a term.

1. General Physics: lectures, with text-book; problems; laboratory work. Prerequisite, Mathematics 1. *Both terms, four hours.* Professor PATTERSON and Mr. CHRISLER.

Laboratory fee, $1.50 a term.

4. Electricity and Magnetism: a study of the phenomena of electricity and magnetism, and their application in modern life, including the use of the X-rays, the rays of Radium and other applications in Electrotherapeutics. Laboratory work required. Elective. *Both terms, two hours.* Professor PATTERSON.

Laboratory fee, $2.00 a term.

Zoology

1. Elements of Zoology; pre-medical; an introductory course giving an outline of the classification and structure of animals, fundamentals of histology, embryology, and physiology, with some consideration of biological theories; lectures with laboratory work. Professor WILSON and Mr. GEORGE.

Laboratory fee, $3.00 a term.

2. Comparative Anatomy of Vertebrates (first half); medical; dissection of vertebrate types: amphioxus, cyclostome, fish, bird, mammal. Professor WILSON.

Laboratory fee, $5.00 a term.

Botany

1. General Botany: an introduction to the structure and classification of plants; lectures with laboratory work. Elective in the first year. Professor COKER and Mr. TOTTEN.

Histology

1. General Histology and Organology. This course includes (*a*) the study of fundamental tissues, followed by

(*b*) the study of the microscopic structure of the various organs, and (*c*) the fundamentals of histological technique. Lectures, recitations, and laboratory. Text, Piersol. *Fall term, nine hours a week.* Professor BULLITT and Mr. STARR.

2. Advanced Histology: To those who have completed course 1 or its equivalent opportunity will be offered to pursue advanced work or original investigation in this subject. Arrangements for this course may be made with Professor BULLITT.

Course 1 is required of all medical students. Course 2 is elective.

Anatomy

Professor MANGUM, Associate Professor LAWSON and Mr. CROUCH.

The courses in anatomy are made as practical as possible. The student makes a complete dissection of all structures under the constant supervision and direction of an instructor, who insists upon the use of text-books, guides and atlases, and holds practical examinations upon all parts dissected. Laboratory talks, demonstrations and conferences take the place of lectures. In those subjects most difficult for the beginner the structures are demonstrated to each individual student.

The courses include gross anatomy, the topography of the body, the application and relation of anatomy to medicine and surgery, the microscopic anatomy of the central nervous system and human embryology. For course in Histology see page 169. Ample facilities are offered to those who may desire to pursue advanced work or original investigation in the field of anatomy.

FIRST YEAR

1. Osteology, arthrology, descriptive anatomy of the thoracic and abdominal viscera, topographical anatomy of the thorax and abdomen, and the dissection of one-half of the structures of the body. *Both terms.*

2. Embryology: The processes of development as manifested in the embryos of the frog, the chick and the pig. The work in the laboratory is supplemented by

a course of lectures upon the development of the human body. *Spring term.*

SECOND YEAR

3. The completion of the dissection of the body. *Fall term.*

4. Topographical and Applied Anatomy: Given in connection with the work in the dissecting room. Embraces the external markings of the organs (viscera, vessels, nerves, etc.), their location and inter-relationships, and the application of anatomy to medicine and surgery. Dissections, models, preparations, and numerous drawings by the students are used as aids in this course. At the end of the second year a final examination is held upon the entire subject of gross anatomy. *Fall term.*

5. Neurology: A special laboratory study of the gross and microscopic anatomy of the cord and encephalon. Each student is provided with numerous prepared dissections of the human brain and a series of sections through the cord and the brain stem which he studies with the aid of a guide. A human brain is then given to each group of four men and by them dissected in order to correlate and systematize the work already done. A practical examination tests the student's ability to locate the various tracts and nuclei. *Fall term.*

TEXTS: Cunningham, Gray and Piersol; Cunningham's *Manual;* Heisler's *Practical Anatomy; Brain and Spinal Cord* (Villiger); *Anatomy of the Brain* (Whitehead); *Development of the Human Body* (McMurrich); *Laboratory Text Book of Embryology* (Minot).

Physiology

Professor MANNING.

The course in Physiology is given in three parts, as follows:

1. General Physiology: a lecture course of five hours a week extending through the year; a brief account of cell physiology is followed by a detailed discussion of the facts and theories of Human Physiology; atten-

tion is called to the application of physiology in medical practice as far as possible. Text: Howell.

2. Physiological Chemistry: a laboratory course of six hours a week during the fall term. The purely chemical aspects of Bio-chemistry are considered in the course in organic chemistry (Chem. 10) given in the first year. In the course in Physiological Chemistry a practical application of the principles of Bio-chemistry is made in the study of Human Physiology. The chemistry of digestion, of the secretions, of blood, and of the urine is studied in detail, qualitatively and quantitatively, and such tissues are examined as will afford evidence of the course of metabolic processes. Laboratory Notes. References: Hammarsten, Hawk.

3. Experimental Physiology: a laboratory course of five hours a week during the spring term. In this course the student studies the heart and neuro-muscular systems on the turtle and the frog; the circulatory, respiratory, and glandular systems on the mammal. In the former the class is divided into groups of two and in the latter into groups of four. Each group is supplied with mimeographed directions for the performance of each experiment and a full equipment of apparatus, and each student is required to keep a record of the observations, including tracings. Reference: Stewart, Porter, Hill, etc.

Materia Medica and Pharmacology

Professor MacNider and Mr. Greenwood.

1. Materia Medica: the general consideration of the subject is given in the first year of the medical curriculum. In the second year the important drugs are studied in groups, the classification depending upon their physiological action. Emphasis is given to the most important drugs, and their physiological action is studied in detail.

2. Prescription Writing: as early as possible in the course the student's attention is directed to the logical application of various drugs to the relief of morbid condi-

tions. Hypothetical conditions are discussed, and each student writes one or more prescriptions and gives his reasons for the use of the various drugs he employs. The prescriptions are discussed and criticised by the students and the instructor.

3. Pharmacodynamics: this part of the general course in Pharmacology consists in a careful and accurate study of the action of practically all of the more important drugs on the lower animals. For this work, the higher animals, such as the cat and dog, are chiefly used. The class is divided into groups of two or four, and the experimental work is conducted by the student. Each student is required to hand in to the instructor, at the completion of the course, a laboratory note book containing a detailed account of each experiment, an explanation of the results obtained, and the tracings made during the experiments. Oral and written recitations are frequently held. Text: Cushny. *Pharmacology and Therapeutics.* Reference: Sollman.

4. Advanced Pharmacology: two types of courses will be offered: (*a*) an experimental study of the action of various drugs upon the normal animal; (*b*) an experimental study of the action of various drugs and other agents upon the pathological animal.

Bacteriology

Professor MacNider and Mr. Greenwood.

The student learns by practical experience the methods of cultivating, staining, and identifying the principal pathogenic bacteria. A few non-pathogenic and saprophytic forms are studied. The pathological significance of the various forms is explained by lectures, and the pathogenicity of some of the forms is determined by inoculation experiments performed by the class. At intervals during the course unknown organisms are given for identification. In addition to this, each student is required to isolate from the air, water, fecal matter, or pus two organisms and determine their species. The latter part of the course is devoted to the

bacteriological study of milk and water. Text: Jordan. Reference: Park and McFarland.

Minor Surgery and Physical Diagnosis

Associate Professor LAWSON.

The class practices the application of bandages, and learns the modern method of dressing wounds. A short course in Physical Diagnosis is given. Text: Davis on Bandaging.

Pharmacy

Mr. BEARD.

The course in Pharmacy will consist in laboratory work supplemented by lectures. The student will have an opportunity to study the crude drugs and their official prescriptions and doses, and to familiarize himself with pharmaceutical methods in the preparation of official drugs, in writing and compounding prescriptions.

Hygiene

Professor MANNING.

A short course in the elementary principles of Hygiene and Sanitation.

Pathology

Professor BULLITT and Mr. STARR.

1. General and Special Pathology: this course embraces a thorough consideration of general pathological processes from their chemical and physiological as well as their morphological aspects. The subject of Special Pathology is considered upon the same broad basis. The course includes a series of lectures and recitations combined with laboratory work and demonstrations of gross and microscopical preparations. Text, McFarland. *Spring term,* lectures and recitations, *four hours a week.* Laboratory, *nine hours a week.* Prerequisite, Histology 1.

2. Advanced Pathology: opportunity for advanced work in pathology or for original investigation will be offered to a limited number of students upon the presentation

of satisfactory evidence of ability to pursue work of this character.

Course 1 is required of all medical students. Course 2 may be elected by special arrangement with Professor BULLITT.

Advanced Courses for Practicing Physicians

Opportunity for advanced work or for original investigations is offered in all of the laboratories to practicing physicians by special arrangement with the instructors.

SCHEDULE OF RECITATIONS

FIRST YEAR

HOUR TERM	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Fall	Chem. 10	Histology	Chem. 10	Histology	Histology	Histology
8:30						
Spring	Chem. 10	Analomy	Chem. 10	Anatomy		Anatomy
Fall	Histology	Histology	Histology	Histology	Histology	Histology
9:45						
Spring	Pharmacy	Anatomy	Pharmacy	Anatomy		Anatomy
Fall	Histology	Histology	Histology	Histology		Histology
10:40						
Spring	Embryology	Anatomy	Embryology	Anatomy		Anatomy
Fall	Anatomy	Anatomy	Anatomy	Anatomy		Anatomy
11:35						
Spring	Embryology		Embryology			
Fall	Anatomy	Anatomy	Anatomy	Anatomy		Anatomy
12:30						
Spring	Embryology	Anatomy	Embryology	Anatomy		Anatomy
Fall	Chem. 10	Zoology 2	Chem. 10	Zoology 2	Zoology 2	
2:30 4:30						
Spring	Chem. 10	Pharmacy	Chem. 10	Pharmacy		

SECOND YEAR

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Anatomy 2	Anatomy 3	Anatomy 2	Anatomy 3	Anatomy 2	Anatomy 3
Pharma-cology	Pharma-cology	Pharma-cology	Pharma-cology	Pharma-cology	Pathology
Anatomy 2	Anatomy 3	Anatomy 2	Anatomy 3	Anatomy 2	Anatomy 3
Physiology	Physiology	Physiology	Physiology	Physiology	Pathology
Anatomy 2	Bacteriology	Anatomy 2	Bacteriology	Anatomy 2	Bacteriology
Pharma-cology	Pathology	Bacteriology	Pathology	Physiology	Pathology
					Bacteriology
Pharma-cology	Pathology	Pathology	Pathology	Physiology	Pathology
Physiology	Physiology	Physiology	Physiology	Physiology	
Pharma-cology	Pathology	Pathology	Pathology	Physiology	
Physiolog. Chem.	Bacteriology	Physiolog. Chem.	Bacteriology	Physiolog. Chem.	
Pharma-cology	Minor Surg. & Ph. Diag	Hygiene	Minor Surg. & Ph. Diag	Physiology	

The School of Pharmacy

FACULTY

*Francis Preston Venable, Ph.D., D.Sc., LL.D., President.
Edward Vernon Howell, A. B., Ph. G., Dean.

Edward Vernon Howell, A. B., Ph. G., *Professor of Pharmacy.*
John Grover Beard, Ph. G., *Instructor in Pharmacy.*

Henry Van Peters Wilson, Ph. D., *Professor of Zoology.*
William DeBerniere MacNider, M. D., *Professor of Pharmacology.*
Isaac Hall Manning, M. D., *Professor of Physiology.*
Charles Holmes Herty, Ph. D., *Smith Professor of General and Industrial Chemistry.*
William Chambers Coker, Ph. D., *Professor of Botany.*
Alvin Sawyer Wheeler, Ph.D., *Professor of Organic Chemistry.*
James Munsie Bell, Ph.D., *Professor of Physical Chemistry.*
William Lewis Jeffries, A. M., *Instructor in Chemistry.*
Vivian Leroy Chrisler, A. M., *Instructor in Physics.*
Wesley Critz George, A. M., *Instructor in Zoology.*
Henry Roland Totten, A. B., *Assistant in Botany.*
Frank Davies Conroy, *Assistant in Chemistry.*
Victor Aldine Coulter, B. S., *Assistant in Chemistry.*
William Augustus Rudisill, B. S., *Assistant in Chemistry.*
Jackson Townsend, A. B., *Assistant in Chemistry.*
William Renny Harding, *Assistant in Physics.*

FOUNDATION

The School of Pharmacy was founded in 1897 and was opened for students in September of that year. Its location at the seat of the University assures to the students the most modern scientific instruction with all the laboratory facilities

* Absent on leave 1913-1914.

of the undergraduate department, as well as the courses of instruction in the allied branches. These opportunities will meet the requirements of a large number of students who were compelled heretofore to obtain their pharmaceutical education in other states. Briefly stated, the advantages are as follows:

1. Thorough, careful, *individual* training.

2. The practical experience derived from active work in the laboratories.

3. Intimate association with the other departments of the University, to all of which the student of pharmacy has access, and the daily contact with students pursuing various branches of learning.

4. The use of the large library and reading room and the well equipped gymnasium.

5. The comparatively small cost at which a two years' course may be obtained.

6. The length of the course, which consists of two sessions of nine months each,—nearly a fourth longer than in many of the colleges of pharmacy.

The success of the students of this school in their examinations before the State boards has been very gratifying. Students of this School have been applicants before the State boards of Maryland, Pennsylvania, and North Carolina. None of the graduates of this School applying for license before the State boards has failed to pass the examination.

ADMISSION

Candidates for admission into the School of Pharmacy should present themselves on the same days and at the same hours with candidates for admission into the college. For the next academic year these days will be *Monday, Tuesday,* or *Wednesday, September 7, 8,* or *9, 1914,* and *Monday* or *Tuesday, January 4* or *5, 1915*. The session of the School of Pharmacy is of the same length as the College year, beginning *September 10, 1914,* and ending *June 2, 1915*.

Candidates for the degree of Ph. G. must be, on entering, at least 17 years old, and must have completed a high school course of study. They may however enter the first year course without those prerequisites.

The members of the School of Pharmacy enjoy all the privileges extended to other students in the University.

EXPENSES

The charges for each term are payable at the beginning of the term. They are as follows:

Tuition	$30.00
Registration and incidental fees	15.00

There are additional fees as follows:

FIRST YEAR

Chemistry 1 (each term)	$1.25
Physics A (each term)	1.00

SECOND YEAR

Chemistry 3 (each term)	$5.00
Chemistry 9 (April and May)	1.50

The students of Pharmacy are entitled to the use of the gymnasium, the library, and reading room, and, in case of sickness, to medical attention and the use of the infirmary.

Good board is furnished at Swain Hall for $12.50 a month. In the village board without rooms may be secured for from $10 to $16.50 a month. The rent of rooms ranges from seventy-five cents to $6.00 a month. For each room is made a charge of $2.00 a month for electric light and heating.

PRIZES

The Bradham Prize, offered by Mr. C. D. Bradham, of New Bern, N. C., will be given to the student making the highest general average during the two years of study.

Prizes will be given:

1. For the best thesis.
2. For the best collection of native medicinal herbs.
3. For the best exhibit of chemical salts made by a second year student.
4. For the best work in the recognition of materia medica specimens.
5. To the student recognizing the largest number of pharmaceutical preparations.

6. To the student making the best general average during the first year of study.

EXAMINATIONS

Final examinations are held at the end of each term on the subjects embraced in the course.

Quizzes upon the different branches are held regularly. Specimen quizzes upon Materia Medica, Chemistry, and Pharmacy are held once a week, and consist in the recognition and correct writing of the official names of the specimens presented.

Students are required to make an average of 70 per cent. on all examinations and quizzes.

COURSES LEADING TO THE DEGREE OF GRADUATE OF PHARMACY

In order to be recommended for the degree of Graduate of Pharmacy (Ph. G.) the student must have completed with credit the course of study outlined below. The course extends over two sessions of nine months each. The student must have completed the work of both sessions in the School of Pharmacy of this University, or of one session (the second) here after one in some other recognized school of Pharmacy. He must obtain satisfactory marking in attendance, making a general average of 70 per cent. in the various branches, and submit a satisfactory thesis. The thesis must be an original essay embodying the results of the student's personal research in some branch of Pharmacy, which he has prosecuted under the direction of the professor who assigned him the subject. The subject of such thesis must be announced on or before February 1 to the Dean of the Faculty. On May 2 the thesis shall be read before the Dean of the School, subject to criticism and correction. The corrected and approved thesis must be handed to the Registrar in typewritten form on or before May 15. It will be published at the discretion of the Dean of the School. The student must have had a practical experience of at least four years with some qualified pharmacist in a dispensing store. Satisfactory evidence on this point must be submitted to the Dean of the School, and a certificate deposited with the Registrar on or before May 15. Students who have not had the full four years' experience will be permitted to stand ex-

aminations for graduation; but their diplomas will be withheld until they shall have satisfied this requirement. Of the three years of experience required for license by the State Board of Pharmacy, the work done in the Pharmaceutical laboratory will count for one and only one.

FIRST YEAR

Pharmacy 1 (5)
Pharmacy 4 (4)
Pharmacy 8 (3)
Pharmaceutical Botany (3) or
Elementary Physics A (3)
Chemistry 1 (3)

SECOND YEAR

Pharmacy 2 (5)
Pharmacy 5 (8)
Materia Medica (5)
Materia Medica and Pharmacology (5)
Chemistry 3 (2)
Chemistry 9, April and May (3)

COURSES OF INSTRUCTION

Pharmacy

1. Theory and Practice of Pharmacy. This course consists of lectures upon the following subjects, with practical demonstrations and the employment of proper apparatus whenever necessary: metrology, comminution, heat evaporation, distillation, sublimation; fusion, calcination, granulation, oxidation, reduction, etc.; solution of solids, liquids, and gases; deliquescence, efflorescence, etc.; colation, filtration, decolorization, clarification, precipitation, etc.; macration, expression, infusion, decoction, etc.; percolation, and study of the following: waters, syrups, honeys, glycerites, mucilages, mixtures, spirits, elixirs, liniments, collodians, tinctures, wines, vinegars, and fluid extracts. Text: Remington, *Theory and Practice of Pharmacy*. First year. *Both terms, five hours.* Professor HOWELL.

2. Theory and Practice of Pharmacy: The official forms and preparations of drugs are taken up in detail. Beginning with the inorganic compounds, the salts are considered with regard to their commercial qualities and pharmaceutical uses and preparations. The organic compounds are studied, commencing with the salts of the organic acids and passing to the natural and organic compounds. Second year. *Both terms, five hours.* Professor HOWELL.

3. Pharmaceutical Botany and Materia Medica: This course takes up the study of the medicinal plants. It embraces Organography, Vegetable Histology, Morphology, and Plant Geography. Each plant is studied with reference to the part official in pharmacy, the constituents, action and uses, official preparations and assay of the drug. Instruction is also given in growing native plants and in mounting them for exhibition purposes. *Both terms, three hours.* Text-books: Bastins' *College Botany* and Ruddiman's *Materia Medica.* Mr. BEARD.

4. Operative Pharmacy: a practical course with laboratory work. First year. *Both terms, four hours.* Mr. BEARD.

5. Operative Pharmacy: a continuation of course 4. Second year. *Both terms, two hours.* Professor HOWELL.

Materia Medica and Pharmacology

1. Materia Medica: lectures on the geographical and botanical sources of drugs; descriptions and uses of the same, together with their preparation and doses. Opportunity is given the student to familiarize himself with most of the crude drugs and their preparations. Text: White and Wilcox. *Fall term, three hours.* Mr. BEARD.

2. Materia Medica and Pharmacology: This course is devoted to the study of the origin and constitution of remedial measures, their preparations and doses: and in particular, their physiological action and the indications for their rational use. Opportunity will be given

to students to familiarize themselves with the more important crude drugs and their preparations. Instruction is given by means of lectures, recitations, and demonstrations. The lectures intended to accompany the work in Toxicology are given as a part of the course in Materia Medica. Professor MACNIDER.

8. Pharmacy. In this course, which deals with several branches of pharmacy, synonyms are first taken up and all common and practical names of plants and chemicals are studied. Along with synonyms, the specimens commonly seen in drug stores are shown and methods given for the recognition of each. This is followed by a detailed list of all terms descriptive of the therapeutic action of drugs.

A short course is given in Pharmaceutical Latin. A student of this course will be taught to read and write correctly prescriptions in full Latin. In addition, instruction is given in the Latin prefixes and suffixes used to form the names of chemicals and galenicals.

The spring term is wholly taken up with a complete course in pharmaceutical arithmetic. Beginning with the metric system, the student is instructed in Alligation, Specific Gravity, Specific Volume, Percentage, Proportion, etc. Text-book: Sturmer's *Pharmaceutical Arithmetic*. *Both terms, three hours.* Mr. BEARD.

Physics

Elementary Physics (Physics A): the fundamental facts of Physics are studied with some special reference to heat and electricity. Text-book, lectures, and laboratory work. First year. *Both terms, three hours.* Mr. CHRISLER.

Certificate of Physics work done elsewhere than in a college of approved standing will not be accepted in lieu of this course.

Chemistry

1. General Descriptive Chemistry: the elements are studied in a systematic manner; the laws governing their combination, and the compounds resulting, are considered with appropriate reference to their occurrence and re-

lationships to medicine. The latter part of the course is taken up with organic chemistry. Texts: McPherson and Henderson's *General Chemistry*, and Remsen's *Organic Chemistry*, supplemented by lectures and quizzes. First year. *Both terms; lectures, three hours; laboratory, one hour.* Professor HERTY and Messrs. JEFFRIES, RUDISILL, and TOWNSEND.

Laboratory fee, $1.25 a term.

3. Qualitative Analysis: laboratory work with lectures; the behavior of the elements and their compounds is studied in the laboratory. Practice is given in the analysis of known and unknown mixtures with special reference to the detection of poisons and determination of the purity of drugs. Second year. *Both terms, two hours.* Professor WHEELER and Mr. FLUME.

Laboratory fee, $5.00 a term.

9. Toxicology: laboratory work: the chemical behavior of poisons and their separations are studied in the laboratory. Text, Autenrieth and Warren's *Detection of Poisons. April and May, three hours.* Professor WHEELER and Mr. CONROY.

Laboratory fee, $1.50.

OPTIONAL COURSES

The following courses are not required of students in Pharmacy, but may be elected profitably.

Elementary Physiology

The study of Physiology is begun in the spring term of the first year, during which the physiology of digestion, the digestive glands, blood, respiration, metabolism, excretion, and animal heat are considered in lectures illustrated by experiments. The study is continued in the fall term of the second year by consideration of the physiology of the muscles and of the nervous system. During this term also the student learns the methods of experimental physiology by means of class work in the laboratory. Texts: *American Text Book*, Stewart, or Kirke. *Both terms, three hours.* Professor MACNIDER.

Zoology

Elements of Zoology: an introductory course giving an outline of the classification and structure of animals, fundamentals of histology, embryology, and physiology, with some consideration of biological theories; lectures with laboratory work. Text: Parker. *Both terms, three hours.* Professor WILSON and Mr. GEORGE.

Botany

General Introduction to Systematic Botany: with special attention to medical plants; laboratory and field work, with recitations. *Spring term, three hours.* Professor COKER and Mr. TOTTEN.

Chemistry

Technical Chemistry: lectures; the application of chemistry to the arts and industries. This course includes metallurgy, glass making, pottery, (*fall term*); food, clothing, building materials, explosives, photography, etc., (*spring term*). *Both terms, three hours.* Professor HERTY.

Quantitative Analysis: laboratory work. This course is intended to give the student a thorough grounding in analytical methods and manipulations. *Three hours.* Professor BELL.

Quantitative Analysis: laboratory work. The student in this course is led further into the study and practice of analytical methods. The work may take any special direction desired by him, fitting him to be an agricultural chemist, iron chemist, manufacturing chemist, physician, druggist, or teacher of chemistry. The spring term is given to research. *Five hours.* Professor HERTY.

Geology

Determinative Mineralogy: lectures with laboratory work. Dana's *Text-Book of Mineralogy. Both terms, two hours.* Mr. SMITH.

Bacteriology

The student learns by practical experience the methods of cultivating, staining, and identifying the principal bacteria, and their pathological significance is explained by lectures and demonstrations by inoculation of animals. In this way the chief pathogenic bacteria are studied in pure culture on the various media, after which the methods of obtaining pure culture from mixtures of bacteria are learned. The necessary manipulations are carried out by the students, who thus obtain a practical knowledge of the subject which can be gained in no other way. *Fall term, six hours.* Professor MacNider.

Students in Pharmacy have also the privilege of attending any of the regular academic courses.

PHARMACEUTICAL LABORATORY

OFFICERS

Edward Vernon Howell, A. B., Ph. G., Director and *Professor of Pharmacy.*

John Grover Beard, Ph. G., *Instructor in the Pharmaceutical Laboratory.*

James Edison Lytch, *Assistant in the Laboratory.*

The rooms of the Pharmaceutical Laboratory are admirably adapted to this purpose. They are conveniently situated on the first floor, are well lighted, and well equipped with water, electric lights, and gas. To each student is assigned a desk, provided with lock and key, and containing all the apparatus necessary for the every day work of the pharmacist. In the store room is kept a supply of materials for practical work, as well as the apparatus for the more complex operations. Ample space is provided for the work at the prescription counter, where practical instruction in the compounding and dispensing of prescriptions is given.

A small deposit fee is required to cover the cost of breakage of apparatus. At the end of the session this fee will be returned, less the amount of breakage.

OTHER LABORATORIES

The laboratories of Physics, Chemistry, and Biology are open to students in Pharmacy. These laboratories are all equipped with the most approved apparatus for experimentation and illustration.

READING ROOM AND LIBRARY

The School of Pharmacy is provided with a well selected library and with a reading room, inaugurated by the class of 1897, in which are filed a large number of medical and pharmaceutical journals.

In addition to these advantages, students of this department enjoy the privileges of the University reading room, in which are filed all the leading newspapers and magazines, and free access to the University Library, which numbers sixty-seven thousand volumes and eighteen thousand pamphlets.

The Summer School

FACULTY AND OFFICERS

(1913)

*Francis Preston Venable, Ph.D., D.Sc., LL.D., President.
Nathan Wilson Walker, A. B., Director.
Oscar Leach, Secretary.

George Howe, Ph. D., *Professor of the Latin Language and Literature.*
Nathan Wilson Walker, A. M., *Professor of Secondary Education.*
Edward Kidder Graham, A. M., *Professor of English.*
Joseph Gregoire deRoulhac Hamilton, Ph. D., *Alumni Professor of History.*
Andrew Henry Patterson, A. M., *Professor of Physics.*
Marvin Hendrix Stacy, A. M., *Professor of Civil Engineering.*
Harry Woodburn Chase, Ph. D., *Professor of the Philosophy of Education.*
Louis Round Wilson, Ph. D., *Professor of Library Administration.*
James Munsie Bell, Ph. D., *Professor of Physical Chemistry.*
Thomas Perrin Harrison, Ph. D., *Professor of English in the North Carolina College of Agriculture and Mechanic Arts.*
Reed Smith, Ph. D., *Professor of English in the University of South Carolina.*
Thomas James Wilson, Ph. D., *Associate Professor of Latin.*
George McFarland McKie, A. M., *Associate Professor of Public Speaking.*
Robert Diggs Wimberly Connor, Ph. B., *Secretary of the North Carolina Historical Commission.*
Gustav Hagedorn, *Dean of the School of Music in Meredith College.*
Elizabeth Burtt Hagedorn, *Professor of Piano in Meredith College.*

* Absent on leave 1913-1914.

HENRY PATRICK HARDING, A. B., *Assistant Superintendent of the Charlotte City Schools.*

ADOLPHE VERMONT, A. M., *Superintendent of Smithfield Graded Schools.*

MARY OWEN GRAHAM, *Assistant Superintendent of Public Instruction for Mecklenburg County.*

SAMUEL LLOYD SHEEP, M.E., *Superintendent of Elizabeth City Graded School.*

LIZZIE MCIVER WEATHERSPOON, *Supervisor of Drawing in the Training School of North Carolina State Normal and Industrial College.*

LEILA M. COBB, *Critic Teacher in the Practice School of Winthrop College.*

GEORGE KENNETH GRANT HENRY, A. M., *Instructor in Latin.*

VIVIAN LEROY CHRISLER, A. M., *Instructor in Physics.*

JOHN ELIPHALET SMITH, S. M., *Instructor in Geology.*

EDGAR ALLAN HODSON, B. S., *Instructor in Agronomy in the North Carolina College of Agriculture and Mechanic Arts.*

LILY NELSON JONES, *Supervisor of Writing in Durham City Schools.*

EDITH WINFIELD TRUITT, *Supervisor of Music in the Asheville City Schools.*

MARY PRITCHARD, Ph. B., *Teacher in the Chapel Hill High School.*

MRS. T. EDGAR JOHNSTON, *Supervisor of the Primary Department of the Salisbury Graded Schools.*

BESSIE WHITTED, A. M., *Teacher of Drawing in the Durham City High School.*

SPECIAL LECTURERS

LAUTREC CRANMER BROGDEN, *State Supervisor of Rural Elementary Schools for North Carolina.*

COLLIER COBB, A. M., *Professor of Geology.*

KARL JANSEN, *Popular Lecturer and Entertainer.*

GEORGE SOLOMON, *Rabbi Congregation Michve Israel.*

MISS MINNIE W. LEATHERMAN, *Secretary of the North Carolina Library Commission.*

EDWIN R. JACKSON, *Expert U. S. Forest Service.*

CHARLES DE GARMO, Ph.D., *Professor of Education in Cornell University.*

Courses of Instruction

ENGLISH

1. Grammar. A study of the principles of Grammar. Text-book: Robbins and Row's *Grammar and Composition. Six hours a week.* Associate Professor McKie.

2. Grammar and Composition. A re-adjustment of mind toward the study of English Grammar involving a new appreciation of its importance is evidently in progress among thoughtful teachers. This fresh view of the subject and its practical application in composition will guide the instruction in this course. Text-book: Buehler's *A Modern English Grammar. Six hours a week.* Professor Harrison.

3. Composition. Discussion of the principles of composition and practice in composition. Text-book: *English Composition: In Theory and Practice,* by Canby and others. *Six hours a week.* Professors Graham and Smith.

4. The Study of Literature. A consideration, through class discussion and lectures, of the meaning and methods of the study of literature. Numerous and varied illustrations will be considered the first two weeks, followed by a study of three plays of Shakespeare, and selections from three poets of the 19th century. *Six hours a week.* Professors Graham and Smith.

5. American Literature. Two distinctive periods of special significance have so far developed in American literature: one in New England, 1830-1870; the other in the Southern States since the Civil War. These periods will be studied in their general character and in the lives and works of representative writers. Methods of teaching literature will be discussed. Text-book:

any standard history of American literature, preferably Cairns's. The Library will be used for assigned reading. *Six hours a week.* Professor HARRISON.

6. Literature in the Grades. It is the purpose of this course to indicate materials and methods of teaching literature in the grades, and in developing a taste for good literature. Poetry and prose stories suited to each grade from the first to the eighth will be discussed, and each student will be required to prepare for and present at least one poem and one story. *Six hours a week.* Associate Professor MCKIE.

HISTORY

1. The History of England. Lectures and assigned readings. Text-book: Walker's *Essentials of English History.* *Six hours a week.* Professor HAMILTON.

2. The History of the United States to the close of Reconstruction. Lectures and assigned readings. Text-book: Hart's *Essentials in American History.* *Six hours a week.* Professor HAMILTON.

3. North Carolina History. A review course on the leading events and men in the history of the State with special emphasis laid upon the social, economic, and political development of the people. Lectures and reference reading. Text-book: Hill's *Young People's History of North Carolina.* *Six hours a week.* Professor HAMILTON and Mr. CONNOR.

4. Greek History. A general course dealing with the social and political aspects of Greek civilization from its origin to the fall of the Macedonian Empire. Contrasts and comparisons between the Greek democracies and modern popular governments will receive attention. Lectures, text-books, and readings. Text-book: Myers's *History of Greece.* *Six hours a week.* Professor HAMILTON and Mr. CONNOR.

5. Roman History. A general course dealing with the social and political aspects of Roman civilization; the development of Roman power and the expansion of

Roman dominion; the organization of the world-state and the extension of Roman civilization; Rome's contribution to modern civilization. Text-book: Meyers's *History of Rome*. *Six hours a week.* Associate Professor WILSON and Mr. CONNOR.

LATIN

1. Elementary Course.—Pronunciation, inflection, syntax of cases and verbs; special study of the subjunctive, indirect discourse, relative and conditional sentences. Text-book: Bennett's *Latin Grammar*. *Six hours a week.* Professor HOWE.

2. Cæsar. A course in Cæsar's *Gallic War,* I-IV. Translation and syntax; reading at sight; special attention to methods of teaching. Any standard text of Cæsar's *Gallic War*. *Six hours a week.* Associate Professor WILSON.

3. Cicero. Course in Cicero's Orations against Catiline. Translation and syntax. Any standard text of the Orations against Catiline. *Six hours a week.* Professor HOWE.

4. Vergil. Course in Vergil's Aeneid, I-VI. Translation and syntax. Text-book: Any standard text of Vergil's Aeneid. *Six hours a week.* Mr. HENRY.

5. Latin Composition. *Three hours a week.* Mr. HENRY.

6. Horace. Reading of selected odes with some account of the life and times of the author. Text-book: any complete edition of Horace's Odes. *Three hours a week.* Professor HOWE.

GREEK

1. Elementary Greek. A course for teachers and those beginning the study of Greek. Special emphasis upon methods of teaching. Text-books: Moss's *First Greek Reader* and Babbitt's *Greek Grammar*. *Six hours a week.* Associate Professor WILSON.

2. Xenophon. A course in Xenophon's Anabasis, I-IV. Translation and Syntax, with special attention to pre-

sentation. Any standard text of *Xenophon's Anabasis. Six hours a week.* Associate Professor WILSON.

GERMAN

1. Elementary Course. Grammar. Written exercises. Text-books: Ball's *German Grammar;* Müller and Wenckebach's *Glück Auf. Six hours a week.* Mr. VERMONT.

2. Advanced Course. Rapid review of grammar. Composition, translation. Text-books: Ball's *Grammar;* Lessing's *Minna von Barnhelm. Six hours a week.* Mr. VERMONT.

FRENCH

1. Elementary Course. Grammar. Oral and written exercises. Pronunciation especially emphasized. Elementary conversation. Text-book: Lazare's *Lectures Faciles;* Chardenal's *French Grammar. Six hours a week.* Mr. VERMONT.

2. Advanced Course. Rapid review of grammar. Reading of French authors. For students who have had at least one year of French. *Six hours a week.* Mr. VERMONT.

MATHEMATICS

1. Arithmetic. Lectures and assigned work, including the fundamental operations, fractions, percentage, interest, ratio, and proportion, mensuration, etc. Text-book: Milne's *Progressive Arithmetic, Book III.* Two divisions, I and II. *Six hours a week.* Mr. SHEEP.

2. Secondary Algebra. Lectures and assigned work including factoring, simultaneous equations, exponents, involution and evolution, quadratic equations, the binomial theorem, etc. Text-book: Milne's *Algebra for Secondary Schools. Six hours a week.* Mr. HARDING.

3. Plane Geometry. Lectures and recitations. Text-book: Wells's *Essentials of Plane and Solid Geometry. Six hours a week.* Mr. HARDING.

4. Solid Geometry. Lectures and recitations. Special attention given to the solution of original exercises. Text-book: Wells's *Essentials of Plane and Solid Geometry*. *Six hours a week*. Professor STACY.

5. Plane Trigonometry. Lectures and recitations. Text-book: Granville's *Plane and Spherical Trigonometry*. *Six hours a week*. Professor STACY.

PHYSICS

1. Elementary Course. Mechanics of solids, liquids, and gases. Sound. *Six hours a week*. Professor PATTERSON and Mr. CHRISLER.

2. Elementary Course. Magnetism and electricity. Heat and light. Text-book: Millikan and Gale's *A First Course in Physics*. *Six hours a week*. Professor PATTERSON and Mr. CHRISLER.

Laboratory work will accompany these courses, using Millikan and Gale's *Manual*. Courses 1 and 2 may be taken together. Instruction will also be given in the making of simple apparatus, and in the best methods of representing the subject of Physics to high school classes.

3. Advanced Course. This is a lecture course profusely illustrated by experiments, giving a resume of the work in modern Physics, especially along the lines of the electron theory, radioactivity, vacuum tubes, wireless telegraphy and telephony, electric waves, etc. Course 3 may be taken with profit by anyone who has had an elementary course in Physics and Chemistry. *Three hours a week*. Professor PATTERSON.

ASTRONOMY

1. An Elementary Course in Descriptive Astronomy, taking up in order the earth, moon, planets, sun, stars, comets and nebulæ. Illustrated with lantern slides, and including some outdoor work with the telescope. *Three hours a week*. Professor PATTERSON.

GEOGRAPHY

1. General Geography. A course dealing with home geography, and the geography of North Carolina; with

world relations and the features of the continents. The class will make a study of the influence of relief, climate, environment, etc., on plant and animal life, on human habitations, occupations, government, and industrial development, and upon the development and diffusion of civilization. Maps and laboratory work, and the historical, commercial, and agricultural phases of the subject will receive attention. The text-book adopted by the State (Dodge's *Comparative Geography*) will be used as a guide but others will be included in the critical discussions. *Six hours a week.* Mr. SMITH.

Laboratory fee, $1.00.

2. Physiography. The genesis and classification of topographic forms will be considered and a general study of the physiographic provinces of the United States will be made. The reading of topographic maps, the use of weather maps, the study of minerals and rocks, and the consideration of special topics will be given an important place. Special attention will be given to the physiography of North Carolina and to its relation to the development and conservation of the natural resources of the state. Assistance will be given in the purchase, installation, and use of apparatus, instruments, and other equipment for field and laboratory work. The use of field and laboratory methods of instruction will be taught by practical demonstration involving the equipment of the Department of Geology and the field in the vicinity of Chapel Hill. Text-book: Salisbury, Barrows and Towers's *The Elements of Geography*. *Six hours a week.* Mr. SMITH.

Laboratory fee, $3.00.

CHEMISTRY

1. Inorganic Chemistry. An introduction to the study of the principal elements and compounds. Lectures and laboratory work on alternate days. *Six hours a week.* Professor BELL.

Laboratory fee, $3.00.

2. Analytic Chemistry. Prerequisite, Chemistry 1 above, or its equivalent. Qualitative Analysis during first three weeks, and Quantitative Analysis during second three weeks. Laboratory work daily with short lectures preceding. *Six hours a week.* Professor BELL.

Laboratory fee, $5.00.

3. Agricultural Chemistry. Prerequisite, Chemistry 1 above, or its equivalent. An elementary study of the chemistry of plants, soils, fertilizers, insecticides, feeds and water. Daily lectures. *Six hours a week.* Professor BELL.

LIBRARY METHODS

1. Library Administration and Methods. (*a*) General lectures on organization and management of rural, graded, high school, teachers' association, college, and public libraries; use of dictionary card catalogue, indexes, bibliographies, dictionaries, encyclopedias, and general reference books; preparation for special readings, essays, themes, debates, etc.; selection and ordering of books and periodicals suitable for libraries; preparation of illustrated bulletins; children's books and reading. (*b*) Technical lectures on accessioning; classification and book numbers; cataloguing; shelf listing; charging systems; binding, rebinding, and mending books; care of periodicals and pamphlets; use of government publications. Practice in the Library. Practice and instruction will be given under an instructor at any time during the day to those devoting their whole time to the course. *Six hours a week.* Professor WILSON and Miss LEATHERMAN.

EDUCATION

1. Secondary Education. High school organization and administration. (For high school teachers and principals.) Lectures, assigned readings, and class-room discussions. *Three hours a week.* Professor CHASE.

2. Secondary Education. The principles of secondary education. (For high school teachers and principals.)

Lectures and assigned work. Brown's *The American High School* will constitute the basis of this course. *Three hours a week.* Professor CHASE.

3. Educational Psychology. Modern psychological principles and their application to education. Lectures and readings. *Six hours a week.* Professor CHASE.

4. Elementary School Methods. Model lessons for beginners. Model Class work, lectures, and assigned readings. Work with children just beginning school. A class of primary grade children will be organized for the purpose of this course. Lessons in phonics, reading, language work, numbers, nature study, etc., covering the general work of the first grade. Observation and practice teaching in the Practice School. This course will be given in two sections: I by Miss GRAHAM; II by Miss COBB. Each division, *six hours a week.*

5. Elementary School Methods. Methods and model lessons grades 2 and 3. Lessons, lectures, and assigned readings, covering the general work of the second and third grades. The writing of lesson plans. Games, songs, discussion and demonstration of the principles underlying the selection and presentation of stories to children. Special attention will be given to the reading and language work of these grades. Observation and practice teaching in the Practice School. The State-adopted books will be used in this course. *Six hours a week.* Miss GRAHAM.

6. Elementary School Methods. Class-room methods and practices of the intermediate and grammar grades. Lectures, discussions, readings, observation and practice teaching in the Practice School. *Six hours a week.* Miss COBB.

7. The Theory and Practice of Teaching. Lectures and assigned work. This course will be based on Colgrove's *The Teacher and the School. Three hours a week.* Professor CHASE.

DRAWING

Mrs. WEATHERSPOON and Miss WHITTED.

The course will be planned with a view to giving teachers instruction that will give the knowledge necessary to the teaching of school arts in rural and city schools. Plans by which the acquired knowledge can be adapted to the needs of different grades, and methods of presenting lessons in each grade will be carefully discussed and taught. The State-adopted course in drawing will be the basis of instruction, though the work will not be confined wholly to this.

The classes will be under three divisions:

1. Primary Division. For teachers of first, second and third grades. *Six hours a week.*

2. Grammar Division. For teachers of fourth, fifth, sixth, and seventh grades. *Six hours a week.*

3. Advanced Division. For former students who have attained the required degree of proficiency and for supervisors of drawing. *Three hours a week.*

WRITING

Miss JONES.

NOTE.—Free arm movement will be the basis of all the work in writing. The courses offered are planned to make better teachers of writing, hence there will be two definite purposes in view, to improve the handwriting of those taking the courses and to study best methods to be used in teaching children to write.

The courses offered will be helpful to teachers no matter what system they have to teach, as the instruction will be along broad lines, and principles rather than systems will be most emphasized.

In one class (1) the State-adopted copy books will be used, and methods will be emphasized. In another class (2) the prominence will be given to acquiring a free arm movement writing.

Model lessons in primary grades will be given, with and without copy books; blackboard writing; correlation of writing with other studies.

1. Handwriting in the Public Schools. A course for public school teachers. The *Berry Writing Books,* adopted for use in the public schools of North Carolina, will be used in the main, though not exclusively. Two sections, I and II. Each *three hours a week.*

2. Free Arm Movement. In this course the free arm movement will be emphasized; lectures and drills. Two sections, I and II. Each *three hours a week.*

MUSIC

1. Public School Music. Sight-singing, rhythm, sense-training, observation, school music, mechanics, and folk-songs. This course is intended primarily for the grade teacher in the public schools, and will be extended in any direction to suit the needs of the class. *Six hours a week.* Miss TRUITT.

2. Public School Music. Sight-singing, chromatics, dictation, rhythm, two- and three-part singing, suggestions for chorus conducting, the selection of material, etc. *Six hours a week.* Professor HAGEDORN.

3. Public School Music. A course intended for those wishing to qualify themselves as supervisors. It is open only to those who have completed courses 1 and 2 or their equivalent. This course will deal with especial tasks of the supervisor, his relation to the grade teacher, the mechanics of the music lesson, the formation of choruses, chorus conducting, public performances, and other problems. *Three hours a week.* Professor HAGEDORN.

4. Ear Training and Elementary Harmony. The course embraces the formation and recognition of major and minor scales, triads, and intervals, and all seventh chords. The harmonization of simple melodies employing simple or primary harmonies. Text-book: Tapper's *First Year Harmony. Three hours a week,* alternating with Music 5. (See Note under 5.) Professor HAGEDORN.

5. Theory. A course embracing the study of notation, accents, rhythm, scales, acoustics, all tempo marks, etc. Text-book: Tapper's *First Year Theory. Three hours a week,* alternating with Music 4. Professor HAGEDORN.

   NOTE.—Courses 4 and 5 should be taken together. For the two courses a tuition fee of $5.00 will be charged.

6. Advanced Harmony. Those desiring private instruction in advanced harmony, counterpoint, and composition, can make arrangements for this with Professor HAGEDORN. A fee of $5.00 will be charged for this course. Professor HAGEDORN.

7. Piano and Violin. Piano and Violin are taught by both Professor and Mrs. HAGEDORN. Those desiring private instruction can make arrangements for it with Professor HAGEDORN. A fee of $5.00 will be charged for either of these courses. Mrs. HAGEDORN.

A chorus will be organized under the direction of Professor Hagedorn, and one or two choral concerts will be given near the close of the Summer School. Professor Hagedorn will also have charge of the Chapel music.

AGRICULTURE AND NATURE STUDY

1. Elementary Agriculture. A study of the fundamental principles of agriculture to be presented in such a manner as will enable the student to acquire a knowledge of the relation of agricultural instruction to the other subjects and at the same time give such popular information as will be needed to awaken the enthusiasm of the student. A study of the benefits and methods of inoculation for legumes; seed and plant study; fertilizers, fertility, etc. *Six hours a week.* Mr. HODSON.

2. Nature Study. A brief analytical study of plants; their functions, assimilation, and growth; nature study in general in the public schools in connection with gen-

eral information of popular interest; methods and materials. *Three hours a week.* Mr. HODSON.

3. School Gardening. A brief study of plans and methods for conducting the school garden; plants to be grown, rate of seeding, time of planting, etc.; a general survey of the subject with special attention to the beautifying of school grounds. *Three hours a week.* Mr. HODSON.

The Bureau of Extension

COMMITTEE

Louis Round Wilson, Ph. D.
Edward Kidder Graham, A. M.
Nathan Wilson Walker, A. B.
Marvin Hendrix Stacy, A. M.
Andrew Henry Patterson, A. M.
Charles Lee Raper, Ph. D.
Harry Woodburn Chase, Ph. D.
Marcus Cicero Stephens Noble.
Collier Cobb, A. M.

The Bureau of Extension offers to the people of the State:

I. GENERAL INFORMATION

Concerning books, readings, essays, study outlines, and subjects of general interest. Literature will be loaned from the Library upon the payment of transportation charges each way.

II. INSTRUCTION BY LECTURES

Lectures of a popular or technical nature and addresses for commencement or other special occasions will be furnished any community which will pay the traveling expenses of the lecturer. The subjects offered fall into three groups, their nature being indicated by the letters A. B. C. as follows:

Lectures marked A. are popular and of general interest.

Lectures marked B. are specific or technical for study clubs, institutes, farmers' meetings, etc.

Lectures marked C. are lectures or addresses for special meetings, such as commencement, patriotic, and dedicatory occasions, Memorial Day exercises, conventions, etc.

Lectures suitable for both general and special occasions are marked with two letters. In some instances the titles of commencement addresses are not given.

CHARLES WESLEY BAIN, A. M., LL. D., *Professor of Greek.*

B. 1. The Greek Drama; Its Origin and Development.
B. 2. Aeschylus.
B. 3. Sophocles.
B. 4. Euripides.

WILLIAM STANLY BERNARD, A. M., *Associate Professor of Greek.*

A. or B. 1. History of Architecture (one or more lectures).
A. or B. 2. History of Sculpture (one or more lectures).
B. 1. What Is Art?
B. 2. The Birth of the Soul in Art.
B. 3. Architecture and Civilization.
C. 1. Education vs. Culture.

JAMES MANNING BOOKER, Ph. D., *Associate Professor of English.*

A. 1. The Fiction-Making Mind (illustrative readings).
A. 2. The Irish Plays (illustrative readings).

HARRY WOODBURN CHASE, Ph. D., *Professor of the Philosophy of Education.*

A. 1. Fitting the School to the Child.
A. 2. The School and the Twentieth Century.
A. 3. The Child and Heredity.
A. 4. Eugenics.
B. 1. The Individual Child.
B. 2. The High School Pupil.
B. 3. Are the Schools Out of Touch With Life?
B. 4. Character Formation and the School.
C. 1. Citizenship and the School.
C. 2. What the School Ought to Do for the Child.

COLLIER COBB, A. M., *Professor of Geology and Mineralogy.*

A. 1. Where the Wind Does the Work. (An account of the sand-reefs along the North Carolina Coast. Illustrated.)

A. 2. Lessons from the Landes of Gascony. (A region of swamp lands and dunes reclaimed by drainage and tree-planting. Illustrated.)

A. 3. The Yellowstone National Park: America's Wonderland. (Illustrated.)

A. 4. The Work of Snow and Ice. (An account of the glaciers of the Alps and of Alaska. Illustrated.)

A. 5. Paradiso and the Lake District of Northern Italy. (Illustrated.)

B. 1. Geology in Relation to Soils, Drainage, and Crops.

B. 2. Geology in Relation to Wood-textures, the Timber Market, and Wood-using Industries.

B. 3. Geology and Water Supply.

C. 1. Education for Service.

C. 2. New Ideas from the Old World.

WILLIAM CHAMBERS COKER, Ph. D., *Professor of Botany.*

A. 1. A Visit to Luther Burbank. (A description of Mr. Burbank's fruit and flower breeding establishment at Sante Rosa, California. Illustrated.)

A. 2. Across Porto Rico. (A traveler's impressions of this beautiful tropical country. Illustrated.)

B. 1. Bacteriology for the Housewife. (Designed to give an idea of the structure and activities of bacteria and their relation to housekeeping. Illustrated.)

B. 2. Plant Breeding and Its Relation to the Improvement of Farm Crops. (Illustrated by specimens.)

EDWARD KIDDER GRAHAM, A. M., *Acting President and Professor of English.*

A. 1. The Progressive. (A popular lecture on community spirit and development.)

A. 2. The Enjoyment of Books. (A popular lecture on reading.)

C. 1. Ideals and Tasks.

JOSEPH GREGOIRE DEROULHAC HAMILTON, Ph. D., *Alumni Professor of History.*

A. 1. Andrew Jackson, a Product of Democracy.

A. 2. The Real Abraham Lincoln.

B. 1. The Locality as a Field for Historical Investigation.

C. or B. 1. The Question of Constitutional Amendment.

ARCHIBALD HENDERSON, Ph. D., *Professor of Pure Mathematics.*

A. or C. 1. The South's Awakening.

B. 1. The Teaching of Geometry.

B. 2. The Foundations of Geometry.

CHARLES HOLMES HERTY, Ph. D., *Smith Professor of General and Industrial Chemistry.*

A. or B. 1. Chemistry in the Service of Cotton.
A. or B. 2. Aiding Nature in our Pine Forests.
B. 1. Home Illumination.

THOMAS FELIX HICKERSON, A. M., *Associate Professor of Civil Engineering.*

B. 1. Problems of Highway Location, Construction, and Maintenance.
B. 2. Engineering for Land Drainage.

GEORGE HOWE, Ph. D., *Professor of Latin.*

A. 1. The Poetry of the Augustan Age.
B. 1. The Teaching of Latin in the High Schools.

GEORGE MCFARLAND MCKIE, A. M., *Associate Professor of Public Speaking.*

A. 1. Recitals from Kipling.
A. 2. Recitals from Tennyson and Browning.
A. 3. Recitals from Modern American Humorists.
B. 1. The Essentials of Public Speech.

WILLIAM DEBERNIERE MACNIDER, M. D., *Professor of Pharmacology.*

A. or B. 1. The Origin and Prevention of Epidemics of Typhoid Fever.
B. 1. The Value of Diuretic Substances in Different Types of Nephritis. (For county medical meetings.)
B. 2. The Effect of Different Anesthetics on the Pathology of the Kidney in Acute Nephritis.
B. 3. The Effect of Chloroform and Ether on the Heart.

MARCUS CICERO STEPHENS NOBLE, *Professor of Pedagogy.*

A. 1. Scotland and Its Schools.
A. 2. Community Progress.
A. 3. Public Schools and Public Taxes.
A. 4. The Influence of Geography on North Carolina History.
B. 1. Methods of Teaching in the Public Schools.
B. 2. School Management, the Teacher, the Pupil, and the Parent.
C. Commencement and Educational Rally Addresses.

ANDREW HENRY PATTERSON, A. M., *Professor of Physics.*

A. 1. The Story of the Stars. (Illustrated.)
A. 2. The Gyroscope and Its Applications. (With experiments.)
A. 3. Sound Waves and Their Uses. (With experiments.)
B. 1. The Story of Radium. (With demonstrations.)
B. 2. The Teaching of First Year Physics. (With experiments.)
C. Commencement Addresses.

EDGAR RALPH RANKIN, A. B., *Secretary of the High School Debating Union.*

B. 1. How to Organize and Conduct High School Literary and Debating Societies.

CHARLES LEE RAPER, Ph. D., *Professor of Economics.*

A. or C. 1. Taxation by the State.
A. or C. 2. Taxation by the Municipality.
A. or C. 3. Taxation and the Proposed Amendments to the Constitution.
B. 1. Co-operative Marketing of Farm Products.
B. 2. Credits Institutions for the Farmers.
C. Commencement Addresses.

JAMES FINCH ROYSTER, Ph. D., *Professor of English.*

A. or B. 1. The Staging of a Shakesperian Play. (Illustrated.)
B. 1. Methods of Studying the Modern Drama.
B. 2. Woman Suffrage on the Stage.
B. 3. Progressive Changes in Our Everyday Speech.

MARVIN HENDRIX STACY, A. M., *Professor of Civil Engineering.*

A. or C. 1. Some High School Problems.
B. 1. The Farmers' Part in Highway Improvement.
C. Commencement Addresses.

NATHAN WILSON WALKER, A. B., *Professor of Secondary Education.*

A. or C. 1. The School and the Community.
A. or C. 2. Education and Democracy.
A. or C. 3. Our Country High Schools and Their Work. (Illustrated.)
A. or C. 4. The Newer Demands Upon the School and How They Are to Be Met.
A. or C. 5. The State's Educational Agencies.

LESTER ALONZO WILLIAMS, Ph. D., *Professor of School Administration.*

A. 1. The Parent and the School.
B. 1. Those Little Animals We Teach.
B. 2. The Value of Experiment in Teaching.
B. 3. The Pedagogy of Reading.
C. 1. As a Man Readeth, So Is He.

LOUIS ROUND WILSON, Ph. D., *Professor of Library Administration.*

B. 1. The Public Library in Community Building.
B. 2. Books for the Farm and How to Get Them.
B. 3. The Library's Place in the High School Community.

III. CORRESPONDENCE COURSES

Announcement

The University of North Carolina offers to teachers and others extension courses by correspondence under the direction of the School of Education.

The following courses will be given during 1913-'14: Economics, Education, English, German, History, Mathematics, and Rural School Development.

Purpose

These courses are but the beginning of a greater extension work that the University hopes to be able to offer teachers and the public generally at an early day. In this way, it will place University instruction within easy reach of all who may be unable to attend its regular sessions.

The courses are planned with the hope that they will increase both the teacher's and the general reader's knowledge of the subject matter of the text-book and that they will, at the same time, present a rational and consistent method of instruction for the teacher's use in the classroom.

Method and System

Text-books will be required and definite assignments for study will be made as soon as a student registers for the course. Written recitations on the assignments will be required. The papers are to be sent to the instructor who will grade them, make the necessary corrections and suggestions, and return them to the student. In this way direct personal instruction will be given to all. A written examination will be held at the completion of the course.

Time Required

It will require about thirty-two weeks to complete a full course. A course may be begun at any time between October first and March first. If a course should be begun too late in the college year to be completed before the close of the year, it may be completed the following term. Each course will be divided into two parts so that the student may take a full course at his convenience.

Certificates

Upon the satisfactory completion of a course, a certificate to that effect will be promptly issued and sent to the student.

Tuition

The charge for each course is two dollars and the cost of the necessary postage. The fee of two dollars is to be paid upon registration. This small fee will barely cover the cost of stationery and printing. The instruction will be given by regular members of the University faculty whose only motive for giving the several courses is public service and not pecuniary reward.

COURSES OF INSTRUCTION

Economics

1. Economics and Government. A general course in elementary economics. It will treat of the uses of wealth for living, development, and government. It will also treat of the making of wealth by means of agriculture,

manufacture, commerce, and transportation. Text: Raper's *Principles of Wealth and Welfare*. Professor RAPER.

Education

1. A brief study of the Principles of Teaching, the preparation of model lessons based on principles studied. Text: DeGarmo's *Essentials of Method*. Professor NOBLE and Professor WILLIAMS.

2. High School Organization: a study of the American High School, its curricula and methods. Text: Bivin's *American High School*. Professor WILLIAMS.

English

1. Rhetoric and Composition. Practice through theme-writing in punctuation, sentence structure, paragraphing, and the simpler forms of composition. Text: Wooley's *Handbook of Composition*. Associate Professor BOOKER and Mr. SNEATH.

2. General Reading Course in English Literature. The course will attempt to guide the student in a careful and intelligent reading of masterpieces selected from the various periods of English Literature. Professor GRAHAM and Professor ROYSTER.

3. The Modern Drama. Reading and criticism of representative modern dramas: Ibsen, Shaw, Pinero, Jones, Galsworthy, Barker, Hauptmann, Sudermann, Schnitzler, Maeterlinck, Rostand, Brieux, Strindberg. Professor ROYSTER.

German

1. An elementary course equivalent to the first year of high school German. Drill in the essentials of German grammar, translation of easy idiomatic German. Text: Mosher's *Lern-und-Lesebuch*. Professor TOY.

History

1. North Carolina History. A study of the leading facts of North Carolina History. Professor HAMILTON.
2. The essential facts of American History with emphasis laid upon political, social, and economic development. Professor HAMILTON.

Latin

1. Cæsar's Gallic War: Translation; special study of case constructions, analysis of subordinate clauses, exercises in indirect discourse: vocabulary and word-derivation; general reading. Professor HOWE.

Mathematics

1. A review of the principles of arithmetic. Special attention to High School arithmetic. Text: Wells' *Academic Arithmetic,* and Arithmetic leaflets sent by the department. Professor NOBLE.

2. Solid Geometry. A careful study of the text. Original problems. Text: Wells' *Plane and Solid Geometry.* Professor HENDERSON.

IV. GUIDANCE IN DEBATE AND DECLAMATION

EDGAR RALPH RANKIN, A. B., *Secretary.*

This division of the Bureau of Extension offers assistance in two ways:

1. Material is sent from the Library for use in debate and declamation upon the payment of the transportation charges.

2. Through the High School Debating Union it supervises a state-wide debate which culminates in the contest at the University for the Aycock Memorial Cup.

The final contest of the session 1912-1913, in which seventeen schools participated, was won by Messrs. Grady Bowman and Samuel C. Hodgin of the Pleasant Garden High School, Guilford County.

The following bulletins have been issued:
Woman's Suffrage.
Addresses on Education for Use in Declamation.
The Initiative and Referendum.
Public Discussion and Debate.

V. COUNTY ECONOMIC AND SOCIAL SURVEYS

This division of the Bureau of Extension has the supervision of the investigations of the County Clubs, whose purpose is to aid through wisely directed study the efforts to better the economic and social conditions in the various communities of the State.

VI. MUNICIPAL AND LEGISLATIVE REFERENCE AIDS

The work of this division consists in the study of legislative problems and in the furnishing of material that bears upon current legislation.

VII. A TEACHERS' BUREAU

This division attempts to aid communities and schools in securing efficient teachers.

PART FIVE

THE UNIVERSITY LIBRARY
PUBLIC LECTURES
THE BYNUM GYMNASIUM
LABORATORIES
UNIVERSITY ORGANIZATIONS

The University Library

OFFICERS

Louis Round Wilson, Ph. D., *Librarian.*
Charles Lee Raper, Ph. D., *Committeeman.*
William Chambers Coker, Ph. D., *Committeeman.*
William Morton Dey, Ph. D., *Committeeman.*
James Finch Royster, Ph. D., *Committeeman.*
Nan Spotswood Strudwick, B. L. S., *Assistant Librarian.*
Louise Richardson, A. B., *Assistant Librarian.*
John Robert Gentry, *Assistant in the Library.*
Jesse Forbes Pugh, *Assistant in the Library.*
James Eugene Holmes, *Assistant in the Library.*
William Raymond Taylor, *Assistant in the Library.*
Frank Hodges Cooper, *Assistant in the Library.*

The University Library contained at the end of the academic year 1912-1913 sixty-seven thousand and four hundred and fifty-two volumes and about eighteen thousand seven hundred pamphlets. This collection has been largely classified and catalogued according to the Dewey, or decimal system, and its contents have been rendered easily accessible by means of a thorough dictionary author, title, and subject card catalogue.

The Library funds are expended under the direction of the Librarian, the Library Committee, and Professors in charge of Departments with special reference to the instruction given in the University. The annual addition of books from purchase, donations, and exchanges is about thirty-seven hundred volumes, all of which are carefully classified and catalogued as they are received.

The Librarian and those assisting in the Library are constantly in attendance to give help in any line of research or reading. A special collection of dictionaries, encylopedias, almanacs, handbooks, atlases, concordances, and other reference books is provided for general use in the reference room.

In addition to the resources of the general reference room, the Library places at the disposal of students for reference purposes a collection of ten thousand bound periodicals cover-

ing all fields of general, technical, and professional information. A great number of the sets belonging to this collection are complete from their beginning, and consequently completely cover the history and progress of the subjects of which they treat. In this way students pursuing general academic and special technical or professional courses have access to the best American, English, and Continental periodical literature to be found on their subjects. The articles contained in these files are fully indexed in special periodical indexes and are referred to with ease.

Eight hundred and thirty-six current periodicals, transactions of literary, scientific, historical and other societies, university studies, serial publications, and a half hundred daily and weekly newspapers, continuing and supplementing the bound sets, are subscribed for and received annually. They are to be found in the general periodical room and in the seminars, professional schools, and scientific laboratories, where they can be consulted in the course of daily work.

As the Library is a depository for the publications of the United States government, it contains more than seven thousand volumes of material especially valuable for reference in debate and in the study of social and political science, useful arts, and the natural sciences. This collection is thoroughly indexed and its contents are easily consulted.

Five special seminar rooms have been equipped in the general Library to facilitate advanced work in English and German Literatures and Languages, Greek and Latin Literatures and Languages, the Romance Literatures and Languages, History, and North Carolina History. Special scientific and professional collections are to be found in the libraries or seminars belonging to the departments in which such instruction is given. These collections are under the supervision of the instructors in the respective departments and the Librarian, and aid is given students in the use of books relating to their work.

The main Library is housed in a commodious modern library building erected in 1907, and represents an expenditure for construction and equipment of $66,500.00. The reference, current periodical, and seminar rooms in the main Library are large, well lighted, and have table and seating capacity for two hundred students at one time.

The stack room contains two levels of steel shelving with stairway and glass mezzanine floor between and, with its present complement of shelving, capacity for seventy thousand volumes. Its ultimate capacity is one hundred and five thousand volumes, which, taken with that of the other parts of the building, totals one hundred and seventy-five thousand volumes.

Brief instruction in the use of the card catalogue, the periodical indexes, and the reference books generally, is given new students at the beginning of each year, and to any student at any time who may request it. Instruction in a regular University class is also given to students who are preparing for positions in school and public libraries with a view to making them more efficient in the discharge of their special duties.

The Library is open on week days from 8:30 A. M. to 1:15 P. M., and from 2:00 P. M., to 5:00 P. M.; on week day evenings, Saturday excepted, from 7:00 P. M. to 9:30 P. M.; on Sunday, from 2:30 P. M. to 4:30 P. M.; on University holidays from 3:00 P. M. to 4:00 P. M.

The following rules are considered necessary for the proper use of the Library. They will be enforced with strict impartiality.

Subscribers to the Library are the students and members of the faculty.

Other persons who desire to use the Library may become subscribers on payment of the regular Library fee.

The Library fee is four dollars a year, two dollars a term, or fifty cents a month.

Persons who are not subscribers may not borrow books on a subscriber's name.

Not more than three books may be charged to one name at the same time.

Fines for books kept over fourteen days (including the day of issue) will be imposed with exact regularity at the rate of five cents per day. Books borrowed for debate or for class use may be kept out from 9 P. M. until 10 A. M. of the following day. After that hour they are subject to a fine at the rate of five cents per hour. The date on the pocket on fly-leaf of book is sufficient notice when the book is due.

Failure to pay fines within three weeks from the time they are due will debar the delinquent from further use of the Library.

Books from the reference room must remain in the Library during Library hours. They may be loaned only at the discretion of the Librarian.

Magazines must not be removed from the Library until they are bound. If removed they are subject to the regulations applying to debate books.

Mutilation of books or magazines, or defacement by writing in them, must be paid for by purchase of a new copy.

Any conversation in the Library, except to obtain books desired, is forbidden.

Continued disregard for any of these rules will cause the offender to forfeit the right to use the Library.

Public Lectures

THE JOHN CALVIN McNAIR LECTURES

The lecture fund established by the will of John Calvin McNair, of the class of 1849, became available in 1906, and the interest therefrom rendered it possible to begin the lectures in 1908. The honorarium for the lectures amounts to $500, and the remainder of the interest from the fund provides for the suitable publication of the lectures. Under the will the objects of the lectures "shall be to show the mutual bearing of science and religion upon each other and to prove the existence of attributes (as far as may be) of God from nature."

The lectures for 1908 were delivered by Professor Francis H. Smith, LL. D., of the University of Virginia. The three lectures were:

1. The general theme: God Manifest in the Material Universe.
2. His Attributes as Manifested in Physics.
3. His Attributes as Manifested in Astronomy.

The lectures for 1909 were delivered by President Francis Landey Patton, D. D., LL. D., of Princeton Theological Seminary, New Jersey. The four lectures were:

1. The Authority of the Bible.
2. The Authority of the Church.
3. The Authority of Christ.
4. The Authority of the Reason.

The lectures for 1910 were delivered by President David Starr Jordan, Ph. D., M. D., LL. D., of Leland Stanford, Jr., University, California. The lectures were on the theme:

The Stability of Truth.

The lectures for 1911 were delivered by Professor Henry Van Dyke, D. D., LL. D., of Princeton University. The three lectures were:

1. The Poetry of Nature.
2. The Poetry of Patriotism and Humanity.
3. The Poetry of the Unseen World.

The lectures for 1912 were delivered by President Arthur Twining Hadley, A. M., LL. D., of Yale University. The three lectures on the general subject, Some Tendencies of Modern Philosophic Thought, were:

1. Changed Conceptions of Science.
2. New Views of Ethics and of Politics.
3. The Spiritual Basis of Modern Literature.

The lectures for 1913 were delivered by Professor Francis G. Peabody, A. M., D. D., LL. D., of Harvard University. The three lectures were:

1. The Practicability of the Christian Life.
2. The Christian Life and the Modern Home.
3. The Christian Life and Modern Business.

The lectures for 1914 were delivered by President George Edgar Vincent, Ph. D., LL. D., of the University of Minnesota.

LECTURES UNDER THE CARNEGIE ENDOWMENT FOR INTERNATIONAL PEACE

Professor Shosuke Sato, D. Agr., Ph. D., of North Eastern Imperial University, Japan, exchange professor for 1914 under the Carnegie Endowment for International Peace, offered the following lectures:

1. From Old Feudalism to New Imperialism.
2. Local Autonomy and Constitutional Government.
3. Finance—Its Past and Present.
4. Social Reforms and Changes since Restoration.
5. Educational System and Religious Movements.

UNIVERSITY LECTURES

The following University lectures were delivered during the session 1912-1913:

Prof. Harvey Ernest Jordan, Ph. D.: Eugenics.

Mr. Edwin Markham: The Relation of Poetry to Science.

Dean John Whitridge Williams, A. B., M. D.: The Reorganization of the Clinical Courses.

Prof. Percy H. Boynton: Victorian London.

Rev. Samuel McChord Crothers, A. B., D. D., Litt. D.: The Pleasures of an Absentee Landlord.

Mr. Joseph Austin Holmes, D. Sc., LL. D.: 1. The Work of the Bureau of Mines. 2. The Panama Canal.

UNIVERSITY SERMONS

The University sermons for the session 1912-1913 were delivered by:

Rev. George W. Lay, D. D., of St. Mary's College.
Rev. W. N. Johnson, of Wake Forest.
Rev. Plato Durham, D. D., of Winston-Salem.
Rev. D. H. Ralston, D. D., of Charlotte.
President Jesse C. Caldwell, of Atlantic Christian College.
Rev. R. C. Craven, of Durham.

William Preston Bynum, Jr., Gymnasium

Robert Baker Lawson, M. D., *Director.*
Carl Duffy Taylor, *Assistant.*
William Pell Taylor, *Assistant.*

The William Preston Bynum, Jr., Gymnasium, the gift of Judge William Preston Bynum, in memory of his grandson, William Preston Bynum, Jr., of the class of 1893, is a handsome, two-storied brick building, furnished with modern apparatus, swimming pool, baths, lockers, and running track. It contains also the trophy room and the office of the Physical Director.

Exercise in the Gymnasium is required three hours a week of all freshmen, unless excused by the Physical Director. In the fall, a thorough physical examination of each freshman is made, and the heart, the lungs, the eyes, and the ears are tested, in order that students defective in physical development may be given special work under the personal supervision of the Director. Round shoulders, flat chests, curvature of the spinal column, hernia, and mild cases of congenital paralysis are thus often greatly benefited and sometimes completely corrected. No student need fear ill results from the work. It is absolutely free from strain of any sort, and is directed in strict accordance with the results of the physical examination. It is impossible to attach too much importance to this examination, since it points out the muscular, functional, or organic defects, and enables the student to direct his efforts toward their correction.

Laboratories and Museums

THE PHYSICAL LABORATORIES

Andrew Henry Patterson, A. M., Director and *Professor of Physics.*
Parker Hayward Daggett, S. B., *Professor of Electrical Engineering.*
Vivian Leroy Chrisler, A. M., *Instructor in Physics.*
Edwin Fuller Conrad, *Assistant in Physics.*
Bascom Lee Field, *Assistant in Physics.*
William Renny Harding, *Assistant in Physics.*
John Wesley McIver, *Assistant in Electrical Engineering.*

The Physical Laboratory occupies the eastern half of the main floor and almost the whole of the basement floor of the Alumni Building, amounting to about eight thousand square feet of floor space.

The main floor is divided into a large lecture room, an apparatus room and two laboratories for students in the general course.

In the rooms of the basement are located a large lecture room and the electrical laboratories, including a dynamo laboratory, photometric laboratory, storage-battery room, standardizing laboratory, high-tension laboratory, a laboratory for electric and magnetic measurements and the departmental library and office.

The dynamo laboratory is equipped with standard types of machines varying in size from 2 to 10 H. P., including various shunt and compound dynamos, a 2H. P. series crane-motor, 3 H. P. commutating-pole motor, 5 K. V. A., 3-phase alternator, 3.5 K. V. A. polyphase alternator, 2 H. P., single phase induction motor, 3 H. P., 3-phase induction motor of squirrel-cage type, 5 H. P., 3-phase induction motor, slip-ring type, 3 K. W. polyphase synchronous converter, a number of distributing type transformers and a set of transformers with taps for "T" connection. There are also provided a large number of rheostats, controllers and starting-boxes, a large lamp bank arranged for delta or star connection and two port-

able testing tables with facilities for rapid testing work. None of the windings of the machines is connected up permanently, but all windings and all apparatus are fitted with a plug-and-socket system of connections, and the students are required to make all the connections for each test.

The photometric laboratory is equipped with a standard Reichsanstalt photometer bench with three-meter track, Bunsen screen, Lummer-Brodhun disappearance and contrast screens, and a flicker photometer built by the students. There is also a small photometer arranged for rapid commercial testing. The laboratory is supplied with the following photometric accessories: standard Hefner lamp; a number of certified carbon and tungsten incandescent standards; a compound rotator and an arc lamp mirror selector for taking flux distribution curves; a luxometer for illumination surveys, and a number of shades and reflectors of various types. The laboratory is also supplied with constant potential and constant current arc lamps, direct and alternating current types, a 4-ampere magnetite arc, 12-ampere flaming-arc and a 3.5-ampere mercury-arc.

The storage battery room contains sixty 240-ampere-hour cells made by the Electric Storage Battery Co. This battery furnishes a steady supply of direct current at 120 volts for photometric work, calibration of instruments and for general testing. The voltage is controlled by 8 end-cells located in a room off the dynamo laboratory.

The standardizing laboratory is equipped with a Weston laboratory standard voltmeter, a Siemens-Halske laboratory standard ammeter, Hartmann & Braun Hot-wire voltmeter and ammeter for intermediate standards, a number of Weston standard cells and a Leeds and Northrup Potentiometer with volt-box and a set of standard shunts and multipliers. The circuits of the room are arranged for rapidly calibrating the laboratory testing instruments at any time.

The electric light, central heating, and waterworks plants constitute valuable adjuncts to the laboratory. For work in practical testing there are available a 35 H. P. Ball engine, a 20 H. P. slide-valve engine, two types of steam pumps, two gasoline engines, with calorimeters, meters, thermometers, Orsat apparatus, indicators and other accessory apparatus necessary for making complete tests on power plants. The

central power plant of the University also contains a 115 H. P. Ball and Wood engine, direct-connected to a Crocker-Wheeler 3-phase generator; a 70 H. P. Skinner engine with direct-connected General Electric 3-phase generator; a 50 H. P. De Laval steam turbine; a D'Olier four-stage centrifugal pump, direct-connected to a 75 H. P., 3-phase Crocker-Wheeler motor, and all necessary accessories.

CHEMISTRY HALL

Charles Holmes Herty, Ph. D., Director and *Smith Professor of General and Industrial Chemistry.*
Alvin Sawyer Wheeler, Ph.D., *Professor of Organic Chemistry.*
James Munsie Bell, Ph. D., *Professor of Physical Chemistry.*
William Lewis Jeffries, A. M., *Instructor in Chemistry.*
James Talmage Dobbins, A.M., *LeDoux Fellow in Chemistry.*
Carnie Blake Carter, B. S., *Fellow in Technical Chemistry.*
Victor Clyde Edwards, A. B., *Fellow in Chemistry.*
Leland Brown Rhodes, B. S., *Fellow in Organic Chemistry.*
Frank Davies Conroy, *Assistant in Chemistry.*
Victor Aldine Coulter, B. S., *Assistant in Chemistry.*
Arthur James Flume, *Assistant in Chemistry.*
William Augustus Rudisill, B. S., *Assistant in Chemistry.*
Jackson Townsend, A. B., *Assistant in Chemistry.*

The overcrowded condition of the laboratories and lecture room in Person Hall, and the unsatisfactory ventilation of the laboratories, made urgent the need for a larger and better arranged building for the Department of Chemistry. These facts, together with the complete plans for a new building, were laid before the Legislature in 1905 and an appropriation of $50,000 asked. The appropriation was voted, and in a short while the work of construction was under way.

The new building, Chemistry Hall, is located east of Alumni Hall and north of the New East building, facing west. By the selection of this location good water pressure is assured for all of the laboratories in the building.

The outer walls are of salt and pepper brick laid with black mortar.

The main building, 120 x 68 x 48, comprises a first floor, a second floor, and a commodious basement. Adjoining this main building and to the rear of the center is the lecture room, 41 x 62 x 22.

To the right on entering the main building are the office and the private laboratory of the Director, the department library, and a small laboratory: to the left are the office and private laboratory of the Professor of Organic Chemistry, a large laboratory for organic chemistry, containing locker desks for twenty-four students, and a combustion room.

On the rear or east side of the first floor are the laboratories for organic chemistry for medical students (thirty-two desks), and a private laboratory, advanced quantitative analysis (twenty-four desks), and a research laboratory (six desks).

On the second floor are the laboratories for general chemistry (sixty-six desks), qualitative analysis (sixty desks), physical chemistry (eight desks), electro-chemistry (eight desks), a research laboratory (sixteen desks), a laboratory for quantitative analysis (forty-eight desks), a fume room, and a small lecture room. At the ends of the corridor on the second floor are a balance room, preparation room, and a dark room for spectroscopic work.

In the basement are the assay laboratory, rooms for gas machine, electric furnace, technical chemistry, constant temperature, a photographic dark room, a carpenter-shop, stock room for heavy chemicals, and a large stock room for chemicals and apparatus. From this stock room material is supplied to each floor of the building by an elevator.

Each laboratory is furnished with ample fume closets for the removal of noxious gases, while pivoted window sash insure proper ventilation of the rooms.

The entire building is heated by hot water from the central system of the University.

The main entrance hall leads direct to the lecture room, which is well lighted by high arched windows and has a seating capacity of two hundred, which can be increased somewhat as need requires. To the rear of the lecture room are a preparation room, and a museum for specimens of typical chemicals, minerals, and products illustrating the various phases of chemical industries. Above these two last rooms is a small room for filing charts, diagrams, etc., used in illustrating lectures.

The recently installed storage battery in the Department of Physics furnishes ample current for stereopticon purposes and for motors.

THE BIOLOGICAL LABORATORY

HENRY VAN PETERS WILSON, Ph. D., DIRECTOR, and *Professor of Zoology.*
WILLIAM CHAMBERS COKER, Ph. D., *Professor of Botany.*
WESLEY CRITZ GEORGE, A. M., *Instructor in Zoology.*
HENRY ROLAND TOTTEN, A. B., *Assistant in Botany.*

The Biological Laboratory, Davie Hall, is occupied by the Departments of Zoology and Botany. The building is a rectangular structure of pepper and salt brick and is divided into a main body and two wings. The total length is 125 feet, the depth of the main body 44 feet, that of the wings 38 feet. A basement underlies the whole, above which are two floors. The main body has an additional third chamber, which extends out over the wings, forming spacious air chambers. The building faces north and south, lies to the east of the New East, and adjoins the Arboretum.

The entrance hall, on the first floor, lit with large windows on either side of the main doorway, serves for the exhibition of museum specimens of a more popular character. Back of the entrance hall are herbarium, a room for charts and other lecture apparatus, and a room for the storage of zoological specimens. The west wing of this floor is occupied by a lecture room with a seating capacity of one hundred and twenty, the east wing by a laboratory for the elementary classes in zoology and botany. The latter laboratory is arranged for twenty-four wall tables with window in front of each table.

On the second floor the east wing is occupied by a single large laboratory for advanced work in zoology and the west wing by a similar laboratory for advanced work in botany. Each of these rooms accommodates twenty workers and is lit on three sides with twenty windows. The main building on this floor includes private work rooms for the professors of zoology and botany, two store rooms, and a library. On the third floor of the main body is a photographic studio with windows on the north side extending to the floor, and with skylights. In the basement are a fire proof incubator room,

a room for micro-photography with adjoining dark room, janitor's shop, and rooms for the storage of heavy supplies. The wings in the basement are designed for the keeping of live animals and plants for experimental work in botany and zoology. The building is provided with electric lights and is heated by hot water.

THE GEOLOGICAL LABORATORY AND MUSEUM

Collier Cobb, A. M., Director and *Professor of Geology and Mineralogy.*

Joseph Hyde Pratt, Ph. D., *State Geologist and Professor of Economic Geology.*

John Eliphalet Smith, M. S., *Instructor in Geology.*

Eldred Oscar Randolph, A. B., *Assistant in Geology.*

The Geological Laboratory occupies the first floor of the New East building. In addition to a lecture room with a seating capacity of about fifty, there is a large laboratory supplied with working collections of minerals, rocks, and fossils, and with photographs, maps, and models illustrating geological structure. The laboratory is furnished with three petrographical microscopes, with two microscopes for soil study, and with apparatus for the slicing and polishing of rocks. Microscopic slides have been made of most of the specimens from North Carolina; the department has, also, sections of the typical European rocks. Sections of the rocks around Chapel Hill, and the igneous rocks of the Boston Basin, made by the late Hunter Lee Harris, of the class of 1889, were given to the geological department. There is a room for photographic work.

The University possesses a collection of more than two thousand specimens of building stones, coal, and various products illustrating the economic geology of the State. These are arranged in an exhibition room of six hundred and fifty square feet of floor space. Here also are kept the sections taken with a diamond drill in the coal regions of Pennsylvania, in the region around King's Mountain, where the Summer School of Geology held its sessions, in the Dan River coal fields, and in the Triassic Rocks at Durham, N. C. A complete set of the ores of the precious metals found along the line of the Atchison, Topeka, and Santa Fe Railroad is included in the collec-

tion. Valuable additions have been made to the collection of fossils also, affording increased opportunity for laboratory work in historical geology and paleontology. A small collection of tertiary type fossils from Florida, the gift of Mr. Joseph Wilcox, of Philadelphia, is the most recent addition to the paleontological collection. The collection illustrating economic geology has been largely increased by the addition of many specimens from the mining regions of Northern Ontario. Stereograph and lantern slides illustrating geological phenomena in all parts of the world and lantern slides showing mining methods in all the great mining regions are in constant use.

The department library, which occupies a room adjoining the exhibition room, is supplied with State and United States Reports, the papers of working geologists, the best works upon Geology, and scientific periodicals.

University Organizations

THE DIALECTIC AND PHILANTHROPIC LITERARY SOCIETIES

The Dialectic and Philanthropic Literary Societies were organized in 1795, the year of the opening of the University. Their existence has been inseparably linked with that of the University, and they have shown remarkable power in developing character as well as in training the intellect. They offer facilities for practice in debate, oratory, declamation, and essay writing; and their members become practically familiar with parliamentary law and usage.

Each society owns a large, handsomely furnished hall, the walls of which are hung with oil portraits of illustrious members. Meetings are held by each society every Saturday evening during the college year, admission being confined to members. Public contests in debate between the two societies are conducted twice a year, and in addition to these, there is a system of intercollegiate debates. On Monday evening before Commencement the Inter-Society banquet is held, after which each society has its annual reunion. On Tuesday evening preceding Commencement day four representatives elected from the two societies have a public competition in debate, and a prize is awarded to the successful competitors.

By immemorial custom, students from the eastern half of the State usually join the Philanthropic Society, while those from the western half join the Dialectic Society. Although membership in the societies is entirely optional, yet it is earnestly recommended by the faculty as furnishing unusual opportunities not only for literary culture, but also for the development of self control and the power to persuade and control others.

ELISHA MITCHELL SCIENTIFIC SOCIETY

PARKER HAYWARD DAGGETT, S. B., *President.*
JAMES MUNSIE BELL, Ph. D., *Vice-President.*
*FRANCIS PRESTON VENABLE, Ph. D., D. Sc., LL. D., *Permanent Secretary and Treasurer.*
WILLIAM WALTER RANKIN, A. M., *Recording Secretary.*

The Elisha Mitchell Scientific Society holds monthly meetings during the college year for the discussion of scientific subjects. A Journal, which is the official organ of the North Carolina Academy of Science, is issued quarterly. The object of the Society is to encourage scientific research and to record such matters as pertain to the natural history of the State. The membership is at present restricted to the faculty and students of the University, and members of the staff of the Geological Survey.

At the monthly meetings, which are ordinarily held on the second Tuesday of each month, excellent opportunities are afforded the students to get beyond the ordinary routine of the class room by hearing, reading, and discussing papers on scientific subjects.

The Journal is in a measure a bulletin of the scientific laboratories of the University, and contains many articles written by research students. It is now in the twenty-seventh year. The volumes already issued contain twenty-five hundred pages. By the exchange of the Journal with more than three hundred scientific journals and periodicals, over ten thousand books and pamphlets have been collected, all of which are arranged in the University Library.

THE NORTH CAROLINA HISTORICAL SOCIETY

JOSEPH GRÉGOIRE DEROULHAC HAMILTON, Ph. D., *President.*
HENRY MCGILBERT WAGSTAFF, Ph. D., *Vice-President.*
CLAUDE ALFRED BOSEMAN, *Secretary.*
JOSEPH GRÉGOIRE DEROULHAC HAMILTON, Ph. D., *Permanent Secretary.*

The North Carolina Historical Society was founded in 1833 by Governor David L. Swain. When Governor Swain became President of the University, the Society was moved from

* Absent on leave 1913-1914.

Raleigh to Chapel Hill. Under his leadership it became the centre of historical work in the State and the medium of many notable contributions to the history of the State. On March 22, 1875, through the activity of Kemp Plummer Battle, LL. D., the Society was chartered by an act of the General Assembly. The purpose of the Society is to collect, classify, and publish material illustrative of the history of the State. The Society possesses a valuable collection of books, pamphlets, manuscripts, newspaper files, coins, and other subjects of historic interest. The educational aim of the Society is to create a love for historical study and to give training in scientific methods of historical investigation. To this end meetings are held monthly in the History lecture room, at which papers, based on original research, are read and discussed. At present the Society is devoting its entire attention to the study of county history and to the collection of material bearing upon that subject. All members of the University are eligible for membership.

THE PHILOLOGICAL CLUB

GEORGE HOWE, Ph. D., *President.*
ORESTES PEARLE RHYNE, Ph. D., *Vice-President.*
EUGENE FRED PARKER, A. M., *Secretary.*
LOUIS ROUND WILSON, Ph. D., *Permanent Secretary and Treasurer.*

The Philological Club meets on the third Tuesday evening of each month during the college year. Its membership consists of the instructors and advanced students in the language departments of the University. The object of the Club is to stimulate original investigation in philology and to afford an opportunity for the interchange of views on subjects relating to such work. At each meeting papers are read and discussed. The Club publishes a journal of two issues a year whose contents are contributed by the members. All persons interested in the work of the Club are invited to attend its meetings.

DER DEUTSCHE VEREIN

WALTER DALLAM TOY, M. A., *President.*
KENT JAMES BROWN, Ph. D., *Vice-President.*

The Verein was established for the purpose of stimulating interest among the officers and students of the University in German life. Weekly meetings are held throughout the year, at which the German language only is employed. Subjects of general interest pertaining to German literature, history, social life, and politics are informally discussed. An effort is made to provide students of German with an opportunity to perfect their pronunciation and to improve their control of the spoken language. It is part of the purpose of the Verein to arrange from time to time for public lectures in German. All officers and students of the University interested in the study of German are eligible to membership.

LE CERCLE FRANCAIS

WILLIAM MORTON DEY, Ph. D., *President.*
OLIVER TOWLES, Ph. D., *Permanent Secretary.*

Le Cercle Francais holds weekly meetings at which topics of general interest pertaining to French literature, and French life, manners and customs are discussed. The French language is employed exclusively. It is the aim of the club to stimulate interest in the French language, to provide its members with an opportunity to hear idiomatic French spoken, and to use the language with more facility. All officers and students of the University interested in the study of French are eligible to membership.

MUSICAL ASSOCIATION

M. H. MEEKS, *President.*
J. S. CANSLER, *Business Manager.*
H. S. BROCKMAN, *Secretary-Treasurer.*
G. M. SNEATH, *Director.*

The aim of the association is to foster the love of music and to afford opportunity of instruction to those interested in music. The organization consists of an orchestra, a brass band, a mandolin and a glee club, which are representative of the musical talent of the University.

STUDENT GOVERNMENT

The Student Council

OSCAR LEACH, *President*, President of the Senior Class.
W. P. FULLER, *Secretary*, President of the Junior Class.
T. C. LINN, JR., President of the Sophomore Class.
W. A. SMITH, President of the Second Year Medical Class.
K. A. KIRBY, President of the Second Year Pharmacy Class.
J. S. COWLES, Representative from the Law Class.
P. WOOLLCOTT, (elected by Council) Representative from the Senior Class.
T. C. BOUSHALL, Representative from the Student Body at Large.

The University Council is the head of the honor system. It is the concrete expression of the moral University, the student instrument of self-government. Its members being elected of the students by the students, it is grounded upon, and gives expression to, student sentiment. The Council is not an organization of policemen, nor is it based upon a system of espionage. When any student is felt by his fellow students to be unworthy to remain in the University, the Council takes cognizance of this feeling. It examines the matter, finds the facts in the case, and decides upon the justice of that feeling. If the student is found guilty of conduct unworthy of a University man, he is requested by the Council to leave the University. For example, if it becomes known among the students that a man has been guilty of cheating upon examination, he is disgraced in the eyes of the University community; and the students without hesitation, through their organ of expression, the Council, demand that he forthwith leave the University. The student sentiment expresses itself in this way not only in case of so flagrant a violation of the honor system as cheating, but also in cases of continued drunkenness, gambling, and such other forms of misconduct. Thus it can be seen that the student body has an effective system of self-government, that the motive power of this self-government is student sentiment, and that the organ of expression of this sentiment is the University Council.

The Greater Council

As a natural stage in the development of student government the Greater Council came into existence. The University Council confines its activities to questions relating to discipline. But there are other problems touching the general welfare that need attention. In response to this evident need the Greater Council was organized in 1912-13. It is composed of the University Council, eight men, and in addition two representatives from each academic class, and one representative each from the Graduate, Law, Medical, and Pharmacy Schools, making in all twenty members. The Greater Council holds stated meetings at which it discusses campus problems and projects plans for constructive work. Constantly there arise questions that seem to be the direct concern of no particular class or organization. To all such general questions the Greater Council turns its attention. It has attempted all sorts of tasks,—from improving social conditions on the campus to undertaking and carrying to successful termination a State-wide interscholastic high school track meet. It has come to be an important part of the system of student government. The Greater Council this year is composed of the following members: Oscar Leach, *ex-officio president;* Philip Woollcott, *secretary;* S. W. Whiting, J. A. Holmes, W. P. Fuller, C. E. Ervin, A. R. Newsom, T. C. Boushall, T. C. Linn, Jr., J. M. Huske, F. W. Norris, Oliver Rand, E. K. Proctor, J. S. Cowles, J. S. Cansler, W. A. Smith, J. G. Pate, K. A. Kirby, J. E. Lytch, and Lowry Axley.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION

James E. Holmes, *President.*
H. S. Willis, *Vice-President.*
J. Albert Holmes, *Treasurer.*
Ralph C. Spence, *Secretary.*
Frank P. Graham, *General Secretary.*
Louis R. Wilson, *Advisory Treasurer.*

The University Young Men's Christian Association, with its centrally located House as a meeting place and home for the students; with its work for new students; with its social receptions; with its annually published handbook and directory; with its lyceum course; with its support of eight Sunday schools; with its self-help department; with its semi-weekly

religious meetings; with its ministerial and missionary clubs; with its large enrollment of men in Bible and mission study; the Young Men's Christian Association through these channels is an organized agency for usefulness and an aggressive force for morality in the University life.

However, "the Young Men's Christian Association may not be viewed," says a member of the faculty, "merely as an institution for the conduct of mission work, Bible study and religious meetings. Besides these excellent works which it shares with the churches, it is unique as a democratic student organization wholly given up to solving problems of right living. Its energy, sanity, and devotion have made it the most prominent and efficient organization in the college and the most beneficent influence in the life of the college community."

Bible Study

T. C. Boushall, *Chairman.*

1. Studies in the Life of Christ (Bosworth). Leaders: Shepard Bryan, R. T. Bryan, C. A. Boseman, H. W. Collins, Frank H. Cooper, Walter P. Fuller, Roger McDuffie, J. M. Parker, J. E. Turlington, and J. V. Whitfield.

2. Men of the Old Testament (Willman). Leaders: C. W. Beckwith, J. L. Harrison, R. B. House, S. R. Newman, E. Y. Keesler, D. H. Killeffer, L. H. Ranson, W. F. Taylor, and W. B. Umstead.

3. New Studies in the Acts (Bosworth). Leaders: F. O. Clarkson, J. O. Dysart, G. W. Eutsler, Frank Norris, and P. Woollcott.

Normal Class Leaders: Life of Christ, Rev. W. D. Moss; Men of the Old Testament, Prof. H. W. Chase; New Studies in the Acts, F. P. Graham.

Total enrollment, 308. Daily attendance, 145.

Neighborhood Work

W. P. Fuller, *Chairman.*

Leaders: Clark's Chapel, J. M. Parker, N. Reasoner, and M. B. Fowler; Rankin's Chapel, B. B. McDade, J. I.

Lee, A. L. Tyler, and F. P. Graham; Ephesus, J. F. Jarrell and R. C. Vaughan; Orange Chapel, F. F. Bradshaw and B. F. Auld; Calvander, J. E. Holmes, J. N. Bynum, and H. S. Swain; Mt. Carmel, R. R. Walker, L. V. Scott, and Hugh Hester.

Negro Work

H. S. WILLIS, *Chairman.*

Teachers in the Sunday Schools: J. R. Gentry, R. C. Mitchell, H. S. Willis.

Teachers in the Night School for working boys: B. F. Auld, C. W. Beckwith, Floyd Elsom, Clyde Fore, F. P. Graham, S. B. Lindau, and W. C. Rymer.

Six weeks course in "Negro Life in the South" (Weatherford), led by members of the faculty.

PART SIX

COMMENCEMENT
LIST OF STUDENTS
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SCHEDULES
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One Hundred and Eighteenth Commencement

Sunday, June 1

Baccalaureate Sermon

The Reverend E. Y. Mullins, D. D., LL. D.

Sermon Before the Young Men's Christian Association

The Reverend Josiah Sibley

Monday, June 2

Senior Speakers

John Carroll Busby
Woodfin Grady Harry
Hubert Connor Petteway
Guy Berryman Phillips

Tuesday, June 3

Alumni Exercises

Reunions of the Classes 1863, 1888, 1893, 1903.

The Alumni Address

The Right Reverend Robert Strange, D. D.

The Debate by Representatives from the Dialectic and Philanthropic Literary Societies

Dialectic	*Philanthropic*
John Albert Holmes	Elbert Sidney Peel
Felix Litaker Webster	Seymour Webster Whiting

Wednesday, June 4, Commencement Day

The Commencement Address
The Hon. Thomas R. Marshall

DEGREES IN COURSE

Bachelors of Arts

Ernest Hamlin Alderman
Lowry Axley
James Edgar Bagwell
Stein Hughes Basnight
Paul Archer Bennett
Margaret Kollock Berry
Samuel Robert Bivens
David Remus Blalock
John Carroll Busby
Joseph Yongue Caldwell
George Carmichael
George Lunsford Carrington
James Washington Carter
Ellis Merton Coulter
Gillam Craig
Fields Lilborn Euless
Robert Frederick Gray
Alvah L. Hamilton
Elisha Carter Harris
Woodfin Grady Harry
Martin Armstead Hatcher
Frederick Huffman Higdon
Troy Jay Hoover
Robert Obediah Huffman
John Speight Hunter
Mitchell Ray Ingram
Robert Waldon Isley
Elisha Wiley Joyner
Robert Campbell Jurney
Watson Kasey
James Clyde Kelly
Frank Hunter Kennedy
William Albert Kirksey
Matthew Locke McCorkle
Arnold Artemus McKay
Albert Rosenthal Marks
Fred Wilson Morrison
Thomas Hart Norwood
James Oliver Overcash, Jr.
Virgil Addison Perrett
Hubert Connor Petteway
Walter Raleigh Petteway
Guy Berryman Phillips
William Nicholas Post
Thomas Michael Ramseur
Edgar Ralph Rankin
Douglas LeTell Rights
James Hunt Royster
James Blaine Scarborough
Lacy Lee Shamburger
Horace Sisk
Peyton McGuire Smith
Marshall Turner Spears
Walter Stokes, Jr.
Thomas Edgar Story
Robert Strange, Jr.
Harry Murden Stubbs
Rachel Lawrence Summers
William Smith Tillett
Henry Roland Totten
Jackson Townsend
Daniel Joshua Walker
Archibald Lee Manning Wiggins
Isham Roland Williams
Albert Robert Wilson, Jr.
George Pickett Wilson
John Hilary Andrew Workman

Bachelors of Science in Chemical Engineering

Paul Roby Bryan
Carnie Blake Carter
Victor Aldine Coulter
Clarence Ballew Hoke
Leland Brown Rhodes

Bachelors of Science in Civil Engineering

Swade Emmett Barbour
Jasper Louis Phillips

Bachelors of Science in Electrical Engineering

John Madison Labberton — John Wesley McIver

Bachelor of Science in Medicine

William Easton Wakeley

Bachelors of Law

Karl Braswell Bailey — Wilson Lee Warlick
Robert Winfred Wall — Thomas Brooks Woody

Graduates in Pharmacy

Charles Lea Cox — Frank Haliburton Lunn
John Edward Murray

Masters of Arts

William Battle Cobb — Thomas Ellwood McMillan
Rufus Carson Cox — Herbert Craig Miller
Price Henderson Gwynn, Jr. — Fred Wilson Morrison
Mitchell Ray Ingram — James Hunt Royster
Lucius Eugene Stacy, Jr. — Thomas Sampson Royster

Masters of Science

James Otto Graham — Burke Haywood Knight

HONORARY DEGREES

Doctors of Laws

Thomas R. Marshall — Charles Alphonso Smith

MEDALS, PRIZES, AND FELLOWSHIPS

The William Cain Prize in Mathematics: H. W. Collins.
The Eben Alexander Prize in Greek: D. L. Rights.
The Worth Prize in Philosophy: P. H. Gwynn, Jr.
The Early English Text Society Prize: F. W. Morrison.
The Henry R. Bryan Prize in Law: T. B. Woody.
Prizes in North Carolina Colonial History: First, E. H. Alderman; Second, E. M. Coulter.
The Babbitt Scholarship in Chemistry: H. L. Cox.
The Le Doux Fellowship in Chemistry: J. T. Dobbins.
Fellowship in Chemistry: C. B. Carter.
Fellowship in Chemistry: V. C. Edwards.
Fellowship in Organic Chemistry: L. B. Rhodes.

The W. J. Bryan Prize in Political Science: T. J. Hoover.
The Ben Smith Preston Cup: J. L. Chambers, Jr.
The Freshman Prize in English: B. F. Auld.
The Bingham Prize: J. A. Holmes.
The Mangum Medal: G. B. Phillips.

Elected to membership in *Phi Beta Kappa Society*, 1913: H. W. Collins, J. S. Cansler, J. L. Chambers, Jr., A. R. Brownson, H. L. Cox, G. V. Strong, F. D. Conroy, E. S. Peel, R. W. Holmes, J. Eldridge, H. C. Long, Jr., R. C. Spence, K. C. Royall, S. W. Whiting.

CERTIFICATES

Botany: W. B. Cobb, H. R. Totten.
Chemical Engineering: P. R. Bryan, C. B. Carter, V. A. Coulter, C. B. Hoke, L. B. Rhodes.
Civil Engineering: S. E. Barbour, J. L. Phillips.
Economics: I. M. Bailey, T. J. Hoover.
Education: G. B. Phillips, H. Sisk, T. E. Story, J. H. A. Workman.
Electrical Engineering: J. M. Labberton, J. W. McIver.
English: E. H. Alderman, L. Axley, E. W. Joyner, F. W. Morrison, G. P. Wilson.
French: M. R. Ingram, G. P. Wilson.
Geology: W. B. Cobb, R. C. Jurney.
German: W. A. Kirksey.
Greek: R. O. Huffman, F. W. Morrison.
History: E. M. Coulter, H. C. Petteway, W. R. Petteway.
Latin: W. A. Kirksey.

Students (1913-1914)

Graduates

Arnette, John Madison, Durham.
A. B., 1902, Wake Forest College. Philosophy, Greek, History. Candidate for Ph. D.

Bailey, Karl Braswell, Elm City.
A. B., 1911, LL. B., 1913. History, Economics, Philosophy. Candidate for A. M.

Bearden, George Steele, Chapel Hill.
Ph. B., 1893, Newberry College. Philosophy.

Carter, Carnie Blake, Morganton.
S. B., 1913. Chemistry, Geology, Physics. Candidate for S. M.

Coulter, Victor Aldine, Newton.
S. B., 1913. Chemistry, Physics, Mathematics. Candidate for S. M.

Daniel, James Manly, Jr., Denton.
A. B., 1912. History, Economics, Philosophy.

Dobbins, James Talmage, Rusk,
A. B., 1911, A. M., 1912. Chemistry, Geology, Physics. Candidate for Ph. D.

Edwards, Victor Clyde, Chapel Hill.
A. B., 1909. Chemistry, Geology, Physics. Candidate for Ph. D.

Ferguson, Thomas Wiley, Kendal.
Economics, Philosophy, Education. Candidate for A. B., and A. M.

George, Wesley Critz, Mt. Airy.
A. B., 1911, A. M., 1912. Zoology. Candidate for Ph. D.

Glenn, Robert Craig, Hickory.
A. B., 1907. Lenoir College. History, Economics, English. Candidate for A. M.

Guigou, Stephen Caesar, Valdese.
A. B., 1910, Maryville College. French, Spanish, German.

Henry, George Kenneth Grant, Chapel Hill.
A. B., 1900, A. M., 1904, Hamilton College. Latin, Greek, French. Candidate for Ph. D.

Highsmith, Edwin McKay, New Smyrna, Fla.
Ph. B., 1907. Education, History, Philosophy. Candidate for A. M.

Jeffries, William Lewis, Edgefield, S. C.
A. B., 1910, A. M., 1912. Chemistry, Geology. Candidate for Ph.D.

Johnston, Joseph Henry, Chapel Hill.
A. B., 1910. Education, Philosophy, English. Candidate for A. M.

Lasley, John Wayne, Jr., Burlington.
A. B., 1910, A. M., 1911. Mathematics. Candidate for Ph. D.

McIver, John Wesley, Sanford.
S. B., 1913. Electrical Engineering, Mathematics, Chemistry. Candidate for S. M.

McNeill, Loughlin, Burgaw.
B. S., 1903. Davidson College. Philosophy, Economics.

Orr, James Lawrence, Mars Hill.
A. B., 1912. History, Economics, English. Candidate for A. M.

Pearson, Leslie Winston, Dudley.
A. B., 1909, Guilford College. History, Education, Economics. Candidate for A. M.

Perry, Edwin Jerry, Wilson.
Economics, Philosophy, English. Candidate for A. B., and A. M.

Price, Thomas Moore, Spray.
A. B., 1912. Mathematics, Geology, Physics.

Randolph, Eldred Oscar, Charlotte.
A. B., 1908. Geology, Botany, Economics. Candidate for A. M.

Rankin, Edgar Ralph, Gastonia.
A. B., 1913. Education, Economics, Philosophy. Candidate for A. M.

Rankin, William Walter, Jr., Chapel Hill.
B. E., 1904, N. C. College of Agriculture and the Mechanic Arts, A. M., 1912. Mathematics. Candidate for Ph. D.

Rhodes, Leland Brown, Sylva.
S. B., 1913. Chemistry, Geology, English. Candidate for S. M.

Royall, Kenneth Claiborne, Goldsboro.
German, History, Mathematics. Candidate for A. B., and A. M.

Rudisill, William Augustus, Henry River.
S. B., 1911. Chemistry, Physics, Geology. Candidate for S. M.

Scarborough, James Blaine, Mt. Gilead.
A. B., 1913. Mathematics, Physics. Candidate for A. M.

Seckinger, Daniel Lamont, Rincon, Ga.
A. B., 1913, Lenoir College. English, German, Philosophy. Candidate for A. M.

Shuford, Richard Harvey, Hickory.
A. B., 1913, Lenoir College. Economics, History, Philosophy. Candidate for A. M.

Sneath, George Mark, Chapel Hill.
A. B., 1907, A. M., 1910, Yale University. English, Latin, French. Candidate for Ph. D.

Spears, Marshall Turner, Lillington.
A. B., 1913. Philosophy, Economics, English. Candidate for A. M.

Starr, Homer Worthington, Chapel Hill.
A. B., 1900, Harvard University, A. M., 1901, University of the South. English, History, Economics. Candidate for Ph. D.

Steadman, John Marcellus, Jr., Spartanburg, S. C.
A. B., 1909, A. M., 1912, Wofford College. English, German, French. Candidate for Ph. D.

Taylor, Henry Edward, Pride, Texas.
A. B., 1913, East Texas Normal College. Education, Economics, English. Candidate for A. M.

Totten, Henry Roland, Yadkin College.
A. B., 1913. Botany, Zoology, Geology. Candidate for A. M.

Townsend, Jackson, Marietta.
A. B., 1913. Chemistry, Physics, Geology. Candidate for A. M.

Wicker, Walton Staley, Elon College.
A. B., 1913, Elon College. Mathematics, Geology.

Williams, Luther Carter, Carrboro.
A. B., 1913, Wake Forest College, Economics, History, Philosophy. Candidate for A. M.

Woodall, Charles Lawrence, Raleigh.
A. B., 1913, Wake Forest College. Physics, Mathematics, Economics.

Senior Class

Abernethy, Lonnie Lee,	Science,	Charlotte.
Andrews, Troy Monroe,	Arts,	Chapel Hill.
Angel, Lewis,	Arts,	Franklin.
Aycock, Benjamin Franklin,	Arts,	Fremont.
Bailey, Isaac Mayo,	Arts,	Smithfield.
Blalolock, M. E., Jr.,	Science,	Norwood.
Brownson, Allyn Raymond,	Arts,	Asheville.
Cansler, John Scott,	Arts,	Charlotte.
Carlton, David Hill,	Arts,	Kernersville.
Chambers, Joseph Lenoir, Jr.,	Arts,	Charlotte.
Cobb, Collier, Jr.,	Arts,	Chapel Hill.
Collins, Hubert Walter,	Science,	Holly Springs.
Conroy, Frank Davies,	Arts,	Cullowhee.
Cox, Henry Leon,	Science,	Cullowhee.
Credle, Willie Frontis,	Arts,	Swan Quarter.
Darden, Paul Clifford,	Arts,	Fremont.
Dunnagan, Macon Rush,	Arts,	Yadkinville.
Eldridge, James,	Arts,	Dunn.
Ellington, Kenneth Raynor,	Law,	Clayton.
Feezor, John Gilmer,	Arts,	Silver Hill.
Ferguson, Thomas Wiley,	Arts,	Kendal.
Flume, Arthur James,	Science,	Palatine Bridge, N. Y.
Gentry, John Robert,	Arts,	Waynesville.
Green, Charles Benjamin,	Science,	Kittrell.
Grimsley, Harry Barnette,	Arts,	Greensboro.
Hart, Meade,	Arts,	Mooresville.
Hatcher, John Thomas,	Arts,	Rose Hill.
Holmes, John Albert,	Arts,	Graham.
Holmes, Ralph Wendell,	Arts,	Graham.

Hughes, Clinton Kelly,	Arts,	Asheville.
James, Albert Warren,	Arts,	Laurinburg.
Johnston, Lemuel Roy,	Arts,	Haw River.
Jones, Troy Isaiah,	Arts,	Helton.
Kelly, Donald George,	Arts,	Clarkton.
Knowles, Daniel Lamont,	Arts,	Mt. Olive.
Lasley, Robert Law,	Arts,	Wentworth.
Leach, Oscar,	Arts,	Raeford.
Lee, James Grover,	Arts,	Roxboro.
Lee, Joseph Ira,	Arts,	Four Oaks.
Long, Henry Cyrus, Jr.,	Arts,	Charlotte.
Lord, William Campbell,	Arts,	Wilmington.
Love, James Frank,	Arts,	Statesville.
McIntosh, John William,	Arts,	Denver.
McKnight, Roy Bowman,	Arts,	Charlotte.
Oates, Malcolm Norval,	Science,	Charlotte.
Owen, Frank Redding,	Arts,	Yadkin College.
Parker, Walter Rea,	Arts,	Goldsboro.
Peel, Elbert Sidney,	Arts,	Williamston.
Perry, Edwin Jerry,	Arts,	Wilson.
Pitt, William Franklin,	Arts,	Macclesfield.
Price, Lemuel Alexander,	Arts,	Unionville.
Pritchett, James Turner,	Arts,	Lenoir.
Puett, Anna Mariah,	Arts,	Dallas.
A. B., 1913, Chicora College.		
Pugh, Jesse Forbes,	Arts,	Old Trap.
Ranson, Lucius Henry,	Arts,	Huntersville.
Reed, Ralph Alton,	Arts,	Winston-Salem.
Robinson, Melvin,	Arts,	Atlantic.
Royall, Kenneth Claiborne,	Arts,	Goldsboro.
Scott, Luther Vernon,	Arts,	Siloam.
Sloan, Harold Thomas,	Arts,	Franklin.
Spence, Ralph Case,	Arts,	Kipling.
Strayhorn, Isaac Richerson,	Arts,	Durham.
Strong, George Vaughan,	Arts,	Raleigh.
Struthers, James Arthur,	Science,	Grists.
Taylor, Carl Duffy,	Science,	Newbern.
Thompson, William Reid,	Arts,	Teer.
Walker, John Alfred,	Science,	Germanton.
Webster, Felix Litaker,	Arts,	Wilkesboro.
Whitaker, William Pell, Jr.,	Arts,	Wilson.
Whiting, Seymour Webster,	Arts,	Raleigh.
Willis, Henry Stuart Kendall,	Arts,	High Point.

Junior Class

Allen, Reynold Tatum,	Arts,	Kinston.
Bailey, Kenneth Hubert,	Arts,	Wakefield.
Bell, Daniel Long,	Arts,	Graham.
Boseman, Claude Alfred,	Arts,	Enfield.
Blount, Ferrell Leighton,	Arts,	Bethel.
Boushall, Thomas Callendine,	Arts,	Raleigh.
Brinkley, Robert Lloyd,	Arts,	Elm City.
Bryan, Joseph Shepard,	Arts,	Scott's Hill.
Bryan, Robert Thomas,	Arts,	Chapel Hill
Campbell, Edgar Thomas,	Arts,	Jessama.
Carr, Austin Heaton,	Arts,	Durham.
Clarke, Wilfong Waldron,	Arts,	Morganton.
Coats, Robert Floyd,	Arts,	Angier.
Conrad, Edwin Fuller,	Arts,	Winston-Salem.
Conrad, Howard Clarence,	Arts,	Pfafftown.
Cummings, Alfred Ewing,	Arts,	Winston-Salem.
Davis, Martin Jones,	Arts,	Warrenton.
Day, John Tucker,	Arts,	Walkertown.
Drew, George Frank,	Arts,	Live Oak, Fla.
Edgerton, Earlie Dock, Jr.,	Arts,	Fremont.
Edgerton, Gurney Edverett,	Arts,	Fremont.
Ervin, Carl Edgar,	Science,	Troutman.
Eutsler, George Willard,	Arts,	Greensboro.
Field, Bascom Lee,	Science,	Greensboro.
Fitzgerald, Robert Greeson,	Arts,	Whitsett.
Forney, Adger Carter,	Science,	Greensboro.
Foust, Henry Price,	Arts,	Greensboro.
Fuller, Walter Pliny,	Arts,	Bradentown, Fla.
Gaither, Long,	Arts,	Statesville.
Gunter, Laughton Bruce,	Arts,	Holly Springs.
Harden, Graham,	Arts,	Burlington.
Harding, William Renney,	Arts,	Yadkinville.
Harper, Allen Bostic,	Arts,	Chapel Hill.
Harrell, William Henry, Jr.,	Science,	Williamston.
Harris, Donald Ryan,	Arts,	Arden.
Hill, Thomas Fuller,	Arts,	Durham.
Holder, Brantson Beeson,	Arts,	Walkertown.
Holmes, James Eugene,	Arts,	Graham.
Holton, George Ricks,	Arts,	Winston-Salem.
Huske, William Oliver,	Science,	Fayetteville.
Johnston, Frederick Swain, Jr.,	Arts,	Franklin.
Keesler, Edward Yates,	Arts,	Charlotte.
Kerr, William Doub,	Arts,	Greensboro.

Killefer, David Herbert,	Science,	Bradentown, Fla.
Kornegay, Wade,	Arts,	Chapel Hill.
Lambert, Gabriel deLono,	Arts,	High Point.
Lambert, Henry Dionysus,	Arts,	Angier.
Lilly, Edmund Jones, Jr.,	Science,	Fayetteville.
Lindau, Sigmund Baach,	Science,	Greensboro.
Long, Albert Anderson,	Arts,	Farmington.
McCall, Frederick Bays,	Arts,	Charlotte.
Manning, Frederick Cain,	Arts,	Durham.
Marshburn, Owen Meredith,	Arts,	Eagle Rock.
Martin, Grover Adlai,	Arts,	East Bend.
Maxwell, Baldwin,	Arts,	Charlotte.
Mebane, George Allen,	Arts,	Spray.
Millender, Charles White,	Arts,	Asheville.
Nance, Ophir Carmal,	Arts,	High Point.
Newsom, Albert Ray,	Arts,	Marshville.
Parker, John Lloyd,	Science,	Ahoskie.
Parker, Roscar Edward,	Arts,	Selma.
Paty, B. F.,	Arts,	Tullahoma, Tenn.
Pendergraph, Henry Austin,	Arts,	Durham.
Pickett, Oscar Asa,	Science,	Durham.
Prevatt, Joseph Robert,	Arts,	Lumberton.
Price, James Valentine, Jr.,	Arts,	Spray.
Pritchard, William Nelson, Jr.,	Science,	Chapel Hill.
Pruden, William Dossey, Jr.,	Arts,	Edenton.
Reid, William Kirkpatrick,	Arts,	Gastonia.
Rowe, Joseph Vance,	Arts,	Aurora.
Sahag, Leon Maroot,	Science,	Teheran, Persia.
Scott, Samuel Floyd,	Arts,	Haw River.
Sears, Benjamin Belver,	Science,	Como.
Sloan, Charles Austin,	Arts,	Garland.
Smith, Clairborne Thweatt,	Arts,	Scotland Neck.
Stanford, William Raney,	Arts,	Teer.
Taylor, William Raymond,	Arts,	Louisburg.
Thompson, James Alfred,	Arts,	Haw River.
Thorp, William Lewis,	Arts,	Rocky Mount.
Townsend, William Bartel,	Arts,	Red Springs.
Weatherly, Albert Thomas,	Arts,	Gorman.
Weaver, James Ralph,	Arts,	Chapel Hill.
Weeks, Willie Person Mangum,	Arts,	Washington, D. C.
White, Paul Linwood,	Arts,	Scotland Neck.
Whitfield, James Vivian,	Arts,	Wallace.
Wilkins, John Allen,	Arts,	Draughon.
Woltz, Claud Bernard,	Arts,	Dobson.
Woollcott, Phillip,	Arts,	Salisbury.

Sophomore Class

*Abernethy, Richard Blythe, Jr.,	Arts,	Charlotte.
Anderson, Andrew Vance,	Arts,	Eagle Rock.
Auld, Benjamin Franklin,	Arts,	Baltimore, Md.
Barnes, Rudolph,	Arts,	Clayton.
Black, Hoke Barrymore,	Arts,	Greenville, S. C.
Blaine, James Gornaro,	Arts,	Franklin.
Blalock, Hubert Morse,	Arts,	Raleigh.
Blue, Luther Avon, Jr.,	Arts,	Wilmington.
Bradshaw, Francis Foster,	Arts,	Hillsboro.
Brooks, Robert Plato,	Science,	Woodsdale.
Bryan, Albert Othel,	Science,	Battleboro.
Castelloe, Allen Thurman,	Arts,	Aulander.
Clark, Ralph Vivian,	Arts,	Clarkton.
Clarkson, Francis Osborne,	Arts,	Charlotte.
Cobb, William Borden,	Arts,	Goldsboro.
Combs, Howard Johnson,	Science,	Columbia.
Cone, Herman,	Arts,	Greensboro.
Cook, Robert Edward Lee, Jr.,	Arts,	Tarboro.
Cooper, Frank Hodges,	Arts,	Washington.
Cowan, James Gerald,	Science,	Asheville.
Cox, James Marmaduke,	Arts,	Hertford.
Currie, Edwin Holt,	Arts,	Raeford.
Darden, Douglas Beaman,	Arts,	Fremont.
Deaton, Fred Hyams,	Arts,	Statesville.
Devereux, Robert Eddens,	Arts,	Spencer.
Dickson, James Gillespie,	Arts,	Raeford.
Dobbins, Charles Nelson,	Arts,	Yadkinville.
Dysart, John Overton,	Arts,	Lenoir.
Egerton, Graham Burwell,	Arts,	Louisburg.
Edwards, Lee Henry,	Arts,	Holly Springs.
Elliott, Aubrey McCoy,	Arts,	Columbia, S. C.
English, Charles Eugene,	Science,	Asheville.
Epps, Preston Herschel,	Arts,	Durham.
Farmer, Leslie James,	Arts,	Wilson.
Fearrington, Amos Gregson,	Science,	Edenton.
Fore, Clyde Lathrop	Science,	Charlotte.
Fulcher, Manly,	Arts,	Atlantic.
Goforth, Osborne LeRoy,	Arts,	Durham.
Hall, Lucius Coleman,	Science,	Webster.
Hancock, Franklin Wills, Jr.,	Arts,	Oxford.
Hardison, Herman Henry,	Arts,	Wadesboro.
Hardison, James Archibald, Jr.,	Arts,	Wadesboro.
Harper, William Troy,	Science,	Chapel Hill.

* Died Dec. 1913.

Harrison, James Leftwich,	Arts,	Raleigh.
Hester, Hugh Bryan,	Arts,	Hester.
Hogan, Ernest Glen,	Arts,	Chapel Hill.
Holland, Curtis Avent,	Arts,	Greensboro.
Holt, Walter Lawrence, Jr.,	Science,	Fayetteville.
Homewood, Roy McRae,	Science,	Burlington.
Hoover, William John,	Arts,	Bell Buckle, Tenn.
House, Robert Burton,	Arts,	Thelma.
Hudson, Hinton Gardner,	Arts,	Smithfield.
Hunter, David Wills,	Arts,	Greensboro.
Hunter, Wade Russell,	Arts,	Alexander.
Huske, John Manning,	Arts,	Fayetteville.
Huske, Joseph Strange,	Arts,	Fayetteville.
Jarrell, John Franklin,	Arts,	Chapel Hill, Tenn.
Jernigan, Herman,	Arts,	Benson.
Johnston, Charles Louis,	Arts,	Knoxville, Tenn.
Johnson, Herschel Vespasian,	Arts,	Charlotte.
Jones, John Haywood,	Science,	Newbern.
Jones, Thomas Atkinson,	Arts,	Asheville.
Joyner, William Henry,	Science,	Princeton.
Kent, John Archelaus,	Arts,	Lenoir.
Lassiter, James Horace,	Arts,	Rich Square.
Lewis, McDaniel,	Arts,	Kinston.
Linn, Thomas Calvin, Jr.,	Arts,	Salisbury.
Long, Giles Mebane,	Arts,	Charlotte.
Loughran, George Barnes,	Arts,	Asheville.
Lupton, Edward Willis,	Science,	Swan Quarter.
McCurry, John Dob,	Arts,	Marion.
Marsh, Luther Grier,	Arts,	Marshville.
Merritt, Oscar von Kochtitzky,	Arts,	Mt. Airy.
Meckel, George Curtis,	Arts,	Anderson, Ind.
Miller, Harry,	Arts,	Stony Point.
Mitchell, Roy Colonel,	Science,	Mt. Airy.
Moore, Julian Alison,	Science,	Wilmington.
Moore, James Roy,	Arts,	Lenoir.
Morris, Carlyle,	Arts,	Fremont.
Norris, Frank Wisconsin,	Arts,	Jacksonville, Fla.
Norwood, Evan Wilkins,	Arts,	Goldsboro.
Page, Robert Newton, Jr.,	Arts,	Biscoe.
Parker, John Merrel,	Arts,	Bradentown, Fla.
Patterson, Hazel,	Science,	Burlington.
Pell, William Edward,	Arts,	Raleigh.
Pike, Samuel Clark,	Arts,	Liberty.
Pitt, William Barney,	Arts,	Charlotte.
Reid, Edward Solomon, Jr.,	Science,	Charlotte.

Reynor, Daniel,	Science,	Raleigh.
Rhodes, William Henry, Jr.,	Arts,	Sylva.
Robinson, Clarence,	Arts,	Atlantic.
Robinson, Marius Emmett, Jr.,	Arts,	Goldsboro.
Royall, George Clairborne, Jr.,	Arts,	Goldsboro.
Royster, Beverley Sampson, Jr.,	Arts,	Oxford.
Rymer, William Cecil,	Arts,	Hendersonville.
Shapiro, Moses,	Arts,	Winston-Salem.
Shealy, Willie Brodie,	Science,	White Rock, S. C.
Shrago, Jacob Philip,	Arts,	Goldsboro.
Siddall, Roger Shore,	Arts,	Sumter, S. C.
Smith, Cleveland Lafayette,	Arts,	Indian Trail.
Smith, George Wallace,	Science,	Wilmington.
Stedman, John Porterfield, Jr.,	Science,	Oxford.
Sugg, Eugene Sifax,	Science,	Chapel Hill.
Tayloe, David Thomas, Jr.,	Science,	Washington.
Taylor, James Alexander,	Arts,	Oxford.
Temko, Herman Burton,	Science,	Greensboro.
Thompson, Earle Hinson,	Arts,	Red Springs.
Thorp, Adam Tredwell,	Science,	Rocky Mount.
Turner, Henry Clay,	Arts,	Norwood.
Umstead, William Bradley,	Arts,	Bahama.
Vaughn, Robert Candler,	Arts,	Winston-Salem.
Veasey, Elbert Lambert,	Arts,	Stem.
Walke, William Capehart,	Science,	Avoca.
Walker, Charles Ernest,	Arts,	Morganton.
Welch, Robert Henry Winbourne, Jr.,	Arts,	Hertford.
Whitaker, Zack Lanier,	Arts,	Oak Ridge.
Williams, Marshall McDairmid, Jr.,	Science,	Faison.
Wood, Fred Philips,	Arts,	Edenton.
Wright, Robert Hazelhurst, Jr.,	Arts,	Nashville, Tenn.
Yarborough, Robert Samuel,	Arts,	Lexington.
Zollicoffer, Allen Caulincourt,	Arts,	Weldon.

Freshman Class

Adams, Walter Jarvis,	Arts,	Holly Springs.
Alderman, Harriss Percy,	Arts,	Wilmington.
Allen, Herbert Edwin,	Science,	Asheville.
Allen, William Reynolds, Jr.,	Arts,	Goldsboro.
Allred, Frank Ewing,	Science,	Aberdeen.
Andrews, Claud Fleming,	Arts,	High Point.
Andrews, Ezra Preston,	Arts,	Charlotte.
Andrews, Ralph Preston,	Science,	Chapel Hill.
Aronson, Arthur Aaron,	Arts,	Raleigh.
Austin, William Bryant,	Arts,	Burnthill.

Bacon, Edward Onslow,	Science,	Newton.
Baggett, Venon,	Arts,	Salemburg.
Bailey, Herbert Victor,	Arts,	Neuse.
Bain, Charles Wortley,	Arts,	Chapel Hill.
Baity, Herman Glenn,	Arts,	Harmony.
Barber, Lawrence Corbin,	Science,	Asheville.
Barden, Thomas Atlas,	Arts,	Burgaw.
Barnard, James Carl,	Arts,	Franklin.
Barnes, Troy Thomas,	Arts,	Lucama.
Barnes, William Braddy,	Arts,	Lucama.
Bell, Clifton Linwood,	Arts,	Swan Quarter.
Berry, Benjamin Carroll,	Arts,	Hertford.
Bethune, Richard Frederick,	Arts,	St. Pauls.
Booth, Ernest Spurgeon,	Arts,	Durham.
Boshamer, Cary Carlyle,	Arts,	Statesville.
Bourne, Francis Churchill,	Arts,	Asheville.
Brady, David,	Arts,	Durham.
Brinkley, Edgar Burwell,	Arts,	Elm City.
Bullock, Duncan Douglas,	Arts,	Rowland.
Burden, Henry Vernon,	Science,	Aulander.
Burnett, Charles Earl,	Arts,	Wilmington.
Burnett, Robert Shepard,	Arts,	Wilmington.
Byrd, Charles Brown,	Arts,	Live Oak, Fla.
Campbell, Milton Clyde,	Arts,	Taylorsville.
Capehart, William Jónathan,	Arts,	Roxobel.
Capps, James Arthur,	Arts,	Bessemer City.
Carmichael, Whitfield Chapman,	Arts,	Asheville.
Carr, Leo,	Arts,	Teacheys
Carter, David Vance,	Arts,	Liberty.
Clark, LeRoy,	Arts,	Wakefield.
Clement, Louis Heyl, Jr.,	Arts,	Salisbury.
Cochran, Walter Bingam,	Arts,	Harrisburg.
Coleman, James Millar,	Science,	Asheville.
Combs, Alvah Haff,	Arts,	Columbia.
Cooke, Charles Kearney,	Arts,	Louisburg.
Cowell, Horace Baxter,	Science,	Washington.
Cox, Adlai Roy,	Arts,	Pisgah.
Craig, George Winston,	Arts,	Raleigh.
Crawford, Farrell Moffatt,	Arts,	Cornelia, Ga.
Crawford, Karl Brooks,	Arts,	Sugar Hill.
Crowell, Gordon Bryan,	Arts,	Lincolnton.
Dail, Ernest James,	Arts,	Kenansville.
Dail, George Robert,	Arts,	Kenansville.
Dale, Thomas Richard,	Arts,	Morganton.
Dalton, Wilson Bitting,	Arts,	Winston-Salem.

Daniels, Charles Cleaves,	Arts,	Wilson.
Daniels, Leland Macky,	Arts,	Oriental.
Davis, Robert Cowan,	Science,	Wilmington.
Davis, Thomas Paul,	Arts,	Burlington.
DeLaney, Charles Oliver,	Arts,	Weddington.
Dobbin, Edgar Alexandria,	Arts,	Ledgerwood.
Drew, Herbert Jackson,	Arts,	Live Oak, Fla.
Eagle, Daniel Eugene,	Arts,	Statesville.
Edwards, Robert Lee,	Science,	Guilford.
Eldridge, John Grady,	Arts,	Beasley.
Elias, Miguel Grausman,	Science,	Raleigh.
Elsom, Floyd Howard,	Science,	Hendersonville.
English, Clarence Montraville,	Arts,	Asheville.
Entwistle, William Harry,	Arts,	Rockingham.
Ervin, Samuel James, Jr.,	Arts,	Morganton.
Ferguson, Clyde Vestal,	Arts,	Teer.
Fleming, Charles Mortimer,	Science,	Wilson.
Folger, Carl Louis,	Arts,	Dobson.
Fowler, Marion Butler,	Arts,	East Durham.
Funderburk, Kemp,	Arts,	Monroe.
Gardner, Leslie Paul,	Arts,	Goldsboro.
Ginn, Russell Leonard,	Arts,	Goldsboro.
Glenn, John Melvin,	Arts,	Marion.
Goode, Henry Grady,	Arts,	Connelly Springs.
Goodson, Robert Reid,	Science,	Salisbury.
Graham, Burton McKinnon,	Science,	Rowland.
Gregory, William Herbert,	Arts,	Stovall.
Groome, James Irvin,	Arts,	Greensboro.
Groome, Paul Ballinger,	Arts,	Greensboro.
Gryder, Coffee Harlan,	Arts,	Taylorsville.
Gwaltney, Leroy Parks, Jr.,	Arts,	Hiddenite.
Hale, Joseph Watkins,	Science,	Louisburg.
Hamilton, Ernest Stokes,	Arts,	Unionville.
Hardison, Joseph Hammond,	Arts,	Fayetteville.
Harper, Henry Green, Jr.,	Arts,	Charlotte.
Harris, Charles Spurgeon,	Arts,	Sulphur Springs.
Harris, Julian Earle,	Science,	Henderson.
Harris, Joseph Johnson,	Arts,	Louisburg.
Harriss, Robert Burton,	Arts,	Greensboro.
Hatcher, Matthew James,	Arts,	Mt. Olive.
Hawthorne, Joseph,	Arts,	Concord.
Higdon, Frank McKinley,	Science,	Higdonville.
Higgins, Charles William,	Science,	Greensboro.
Hill, Dudley Brown,	Arts,	Warsaw.
Hill, Edward Ashton,	Science,	Winston-Salem.

Hill, John Bright,	Arts,	Warsaw.
Hobbs, Samuel Huntington, Jr.,	Arts,	Clinton.
Hobgood, James Raymond,	Science,	Mapleville.
Hodgin, Samuel Clarence,	Arts,	Randleman.
Hoffman, Garland Skiles,	Science,	High Point.
Holbrook, John McCraven,	Arts,	Huntersville.
Holloway, Kenneth,	Arts,	Raleigh.
Hood, Richard Thornton,	Science,	Kinston.
Hoover, James Earl,	Science,	High Point.
Horsfield, Basil Tourneur,	Science,	Oxford.
Howell, Willie Frederick,	Arts,	Goldsboro.
Huff, Herbert Henry,	Arts,	Soudan, Va.
Hunt, Edward Outlaw,	Arts,	Oxford.
Hunter, Harry Grimmett,	Arts,	Hendersonville.
Hyatt, Buell Benners,	Arts,	Waynesville.
Hyatt, Carl Britt,	Arts,	Burnsville.
Idol, Victor Hugo,	Science,	High Point.
Isley, Roy Bynum,	Science,	Burlington.
Jackson, Webster Nimms,	Arts,	Jacksonville.
Johnson, Henry McNair,	Arts,	Burgaw.
Johnson, John Gray,	Science,	Lynchburg, Va.
Johnston, James Martin,	Arts,	Chapel Hill.
Joines, Aaron Oscar,	Arts,	Stratford.
Jones, Eugene Patterson,	Arts,	Lenoir.
Jones, Jesse Weimar,	Arts,	Franklin.
Jones, Zebulon Baird Vance,	Arts,	Swan Quarter.
Jordan, Francis Cameron,	Arts,	Greensboro.
Joyner, Edward Grey,	Arts,	Littleton.
Kendall, Everett Allen,	Arts,	Ashboro.
Kendrick, Frank Erwin,	Arts,	Dillon, S. C.
Kernodle, John David, Jr.,	Science,	Graham.
King, James Edwin,	Arts,	Pelham.
Kirk, William Wilson,	Arts,	Jacksonville, Fla.
Kirksey, James Jackson,	Arts,	Morganton.
Klingman, Edwin Carlyle,	Science,	Greensboro.
Koons, Ralph Ray,	Science,	Chadbourne.
Lamb, John Ferebee,	Science,	Elizabeth City.
Lamm, Allison Clifford,	Arts,	Lucama.
Leggett, Chauncey Hoke,	Science,	Hobgood.
Lewis, Marion Harvey,	Arts,	Faison.
Lindau, Alfred Milton,	Arts,	Greensboro.
Loftin, Donald Dean,	Arts,	Trenton.
Love, James Franklin,	Arts,	Lincolnton.
Lynch, Thomas Marvin,	Arts,	Chapel Hill.
McCurry, Charles Handy,	Arts,	Day Book.

McGee, Ward Vann,	Arts,	Leicester.
McIver, Duncan Evander, Jr.,	Arts,	Sanford.
Mackie, Ernest Loyd,	Arts,	Yadkinville.
McPherson, Paul Vestal,	Arts,	Liberty.
Mann, Weaver George,	Arts,	Prentiss.
Markham, Blackwell,	Arts,	Durham.
Marlowe, William Anderson,	Arts,	Wilson.
Martin, Stanley Robert,	Science,	Salisbury.
Mason, Dennis, Jr.,	Arts,	Atlantic.
Mathews, Murray Hilliard,	Arts,	Florala, Ala.
Matthews, Sanford Eugene,	Arts,	Siloam.
Maxwell, Justin Ward,	Arts,	Raleigh.
Maynard, Belvin Womble,	Arts,	Chapel Hill.
Meyer, Louis B.,	Arts,	Enfield.
Miller, Clyde Caswell,	Arts,	Blowing Rock.
Mock, Henry Bascom,	Arts,	Pfafftown.
Monroe, Will Galpin,	Science,	Wilmington.
Moore, DuBrutz Cutlar,	Arts,	Burgaw.
Moore, William Tamerlane,	Arts,	Farmville.
Morgan, Eli John,	Science,	Benson.
Nims, Frederick Boyden, Jr.,	Arts,	Mt. Holly.
Norman, Milton,	Science,	Halifax.
O'Brient, Earl James,	Science,	Durham.
Orr, Joe Lee,	Arts,	Matthews.
Otten, Kenneth Peschau,	Arts,	Wilmington.
Parker, George Farrar,	Arts,	Asheville.
Parker, James Curtis,	Arts,	Monroe.
Paton, Noel Edward,	Arts,	Fayetteville.
Patton, Edward Lapsley,	Science,	Newport News, Va.
Patton, James Ralph, Jr.,	Arts,	Durham.
Peirce, John Miller,	Arts,	Warsaw.
Perdew, John William,	Arts,	Wilmington.
Perry, Ely Jackson,	Arts,	Kinston.
Pike, David Virgil,	Arts,	Siler City.
Pleasants, Harvey McKay,	Science,	Rowland.
Pless, James William,	Arts,	Marion.
Polk, William Tannehill,	Arts,	Warrenton.
Porter, Thurman Allen,	Arts,	Kernersville.
Proctor, Edward Knox,	Arts,	Lumberton.
Proctor, William Isaac,	Arts,	Raleigh.
Quinn, Frank Elbert,	Arts,	Warsaw.
Raiff, Isadore,	Science,	Winston-Salem.
Ramsey, Albert Lyle,	Arts,	Franklin.
Ramsay, James Graham,	Arts,	Salisbury.

Rand, Oliver,	Arts,	Smithfield.
Randolph, Marion Herbert,	Arts,	Charlotte.
Ranson, John Oliver,	Arts,	Huntersville.
Ratcliff, Zeno Olen,	Science,	Pantego.
Rawlings, Lenox Daniel,	Science,	Wilson.
Ray, James Clyde,	Arts,	Hillsboro.
Raynor, James,	Arts,	Benson.
Reasoner, Norman,	Arts,	Oneco, Fla.
Reid, John Calvin,	Arts,	Silver Hill.
Reed, Walter Marion,	Arts,	Fairview.
Renn, Harry Jackson,	Arts,	Oxford.
Roberts, Charles John, Jr.,	Arts,	Lyons.
Robertson, Owen Spencer,	Science,	Hillsboro.
Rogers, Torrence Baxter,	Arts,	Lincolnton.
Ross, Robert Marion, Jr.,	Arts,	Shelby.
Rountree, Moses,	Science,	Wilson.
Rousseau, James Parks,	Science,	Wilkesboro.
Royster, David Wyeth,	Arts,	Shelby.
Ruffin, Thomas White,	Arts,	Louisburg.
Schiffman, Harold Anthony,	Science,	Greensboro.
Scott, Byron Carlisle,	Science,	Charlotte.
Shamburger, Frank Dudley,	Arts,	Biscoe.
Sharpe, Howard D.,	Arts,	Stony Point.
Sherrill, Horace Cleveland,	Arts,	Lincolnton.
Shipp, Fabius Busbee,	Arts,	Raleigh.
Shrago, Harry Isaac,	Arts,	Goldsboro.
Shuford, Clinton Lockwood,	Science,	Fairview.
Shuford, George Adams, Jr.,	Arts,	Asheville.
Siddall, Bernard Andrew,	Arts,	Sumter, S. C.
Sloan, Clyde Neely,	Science,	Charlotte.
Sloan, Carter Siler,	Arts,	Franklin.
Slover, George,	Science,	Newbern.
Smith, Joseph Elmer,	Arts,	Wilson.
Smith, Paul Faison,	Arts,	Raleigh.
Smith, William Oliver,	Arts,	Raleigh.
Smithey, Sherman Bryan,	Arts,	North Wilkesboro.
Sparger, Randall Worth,	Science,	Mt. Airy.
Spencer, Robert Baxter,	Arts,	Hobucken.
Squires, Claude Babbington,	Science,	Charlotte.
Starr, Robert Brooks,	Science,	Wilkesboro.
Stell, John Spencer,	Arts,	Raleigh.
Stevens, Henry Leonidas,	Arts,	Warsaw.
Strange, Thomas Wright,	Science,	Wilmington.
Strickland, Walter Roby,	Arts,	Four Oaks.
Suddreth, Willis Clyde,	Arts,	Lenoir.

Swain, Herbert Linwood,	Arts,	Jerry.
Tandy, George Wendall,	Science,	Jacksonville, Ill.
Tanner, Simpson Bobo,	Arts,	Charlotte.
Tate, Charles Lacey,	Arts,	Chadbourne.
Taylor, William Grimsley,	Science,	Greensboro.
Teague, Everette Simon,	Arts,	Taylorsville.
Telfair, Samuel Fowle,	Arts,	Raleigh.
Thompson, Charles Aycock,	Arts,	Goldsboro.
Thorp, Lewis Sumner,	Science,	Rocky Mount.
Timberlake, Francis Justice,	Arts,	Youngsville.
Tomlinson, George Washington,	Arts,	Lucama.
Toxey, Roy Sawyer,	Arts,	Elizabeth City.
Travis, Edward Llewellyn, Jr.,	Arts,	Halifax.
Turlington, Richard Stamey,	Arts,	Clinton.
Tyler, Arthur Lynwood,	Arts,	Henderson.
Vance, Joseph Hezekiah,	Science,	Huntersville.
Walker, Robert Richmond,	Arts,	Union Ridge.
Wall, Frank Privette,	Arts,	Wendell.
Wall, George Collins,	Science,	Hillsboro.
Warden, Eli Beecher,	Arts,	Yadkinville.
Ware, James Eastham,	Arts,	Charlotte.
Warrick, Ed.,	Arts,	Sioux.
Watkins, Robert Young,	Arts,	Thomasville.
Watson, William Randolph, Jr.,	Arts,	Darlington, S. C.
Webster, Jennings Bryan,	Arts,	Siler City.
Wellons, Wilbert Freeman,	Arts,	Selma.
White, Ralph Leon,	Arts,	Winston-Salem.
Williams, Macon McCorkle,	Arts,	Newton.
Williams, Virginius Faison,	Arts,	Faison.
Williamson, Allen Davidson,	Science,	Asheville.
Wilson, Fred Lee,	Science,	Charlotte.
Wilson, John Nestor, Jr.,	Arts,	Greensboro.
Wilson, John Thomas,	Arts,	Rural Hall.
Wilson, Max,	Arts,	Durham.
Winslow, Hillary Goode,	Arts,	Hertford.
Woodall, Edward Lester,	Arts,	Smithfield.
Wooten, Floyd Pugh,	Science,	Kinston.
Worthington, Hubert Smith,	Science,	Winterville.
Wright, James Thomas Carr,	Arts,	Hunting Creek.
Wright, Theodore Oran,	Arts,	Pleasant Garden.
Wright, William Cullen, Jr.,	Arts,	Winston-Salem.
Wyatt, Arthur Thomas,	Science,	Raleigh.
Yates, Grover Cleveland,	Arts,	Chadbourne.
Yelverton, William Bayard,	Arts,	Goldsboro.

Special Students

Andrews, Junius Mebane,	Elect. Med.,	Mebane.
Angel, Furman,	Elect. Med.,	Franklin.
Bell, Felix Ortan,	Elect. Med.,	Linden.
Bonner, John Bryan,	Elect. Med.,	Bonnerton.
Booth, Shepherd Allen,	Special,	Oxford.
Bridgers, Robert Rufus, Jr.,	Special,	Brookline, Mass.
Bynum, Joseph Nicholas,	Special,	Farmville.
Byrd, Carl Hendrix,	Elect. Med.,	Morrisville.
Cagle, Bert,	Elect. Teach.,	Waynesville.
Capps, Edward Francis,	Elect. Law,	Lucama.
Coggin, Charles Lee,	Elect. Law,	Salisbury.
Conrad, Druid Homer,	Special,	Lexington.
Cook, John Henry,	Elect. Law,	Fayetteville.
Coppridge, William Maurice,	Elect. Med.,	Roanoke, Va.
Crouse, Rush Floyd,	Elect. Law,	Nile.
Deaton, Enoch McKnight,	Special,	Mooresville.
Dowd, William Carey, Jr.,	Special,	Charlotte.
Edwards, Opie Gray,	Special,	Spring Hope.
Folger, Paul Bernays,	Elect. Med.,	Dobson.
Gardner, Paris Cleveland,	Elect. Law,	Shelby.
Green, James Alfred,	Elect. Journ.,	Lumberton.
Grimsley, William Tull,	Special,	Greensboro.
Haukler, James Frank,	Special,	Sparta.
Harper, George Arthur,	Special,	Chapel Hill.
Harrison, Theodore Lyman,	Elect. Med.,	Enfield.
Hart, Julian Gilliam,	Elect. Law,	Winston-Salem.
Hawks, Cyrus Eugene,	Elect. Med.,	Mt. Airy.
Hester, Harvey Smith,	Elect. Law,	Asheville.
Hicks, Vonnie Monroe,	Elect. Med.,	Greensboro.
Holt, John Ransom, Jr.,	Elect. Med.,	Princeton.
Hubbard, Frederick Cecil,	Elect. Med.,	Wilkesboro.
Hunter, Norfleet,	Special,	Oxford.
Jarman, Emerson Wiley,	Elect. Med.,	Farmville, Va.
Joyner, James Craig,	Elect. Med.,	Princeton.
Kendrick, Garrie Lee,	Elect. Med.,	Cherryville.
Koonce, Edward Thomas,	Elect. Med.,	Richlands.
Kornegay, Alma,	Special,	Chapel Hill.
Lackey, Boston McGee,	Special,	Lincolnton.
Lawrence, Benjamin Jones,	Elect. Med.,	Creedmoor.
Leak, James Augustus, Jr.,	Special,	Wadesboro.
Little, Robert Eugene,	Special,	Wadesboro.
Long, Joseph Kindred,	Elect. Med.,	Seaboard.
Lovelace, Oscar Newton,	Special,	Mooresboro.

McCall, Charles M.,	Elect. Med.,	Tamassee, S. C.
McDade, Brodie Banks,	Elect. Med.,	Hillsboro.
McGuire, Burruss Boyd,	Elect. Med.,	Norton.
McLean, Ewen Kenneth,	Elect. Med.,	Buie.
McNamara, Andrew Edward,	Elect. Med.,	Jacksonville, Fla.
Marsh, Edward Baxter,	Special,	Salisbury.
Massengill, Jasper Talmage,	Elect. Med.,	Four Oaks.
Meeks, Marcus Henry, Jr.,	Elect. Law,	Nashville, Tenn.
Miller, Mary Scales,	Special,	Chapel Hill.
Murray, Willard Earle,	Special,	Durham.
Nelson, Charles Etheridge,	Special,	Murfreesboro.
Parker, William Baylies,	Special,	Goldsboro.
Patterson, Harriet Oldring,	Special,	Hartford, Conn.
Payne, Ancus Lafayette, Jr.,	Elect. Med.,	Rural Hall.
Pridgen, Ralph Craven,	Special,	Tabor.
Pritchett, Henry Wooding,	Elect. Med.,	Danville, Va.
Ragland, William Trent,	Special,	Salisbury.
Rouse, Walter Bryan,	Special,	Chapel Hill.
Scott, Albert Lee,	Elect. Med.,	Polloksville.
Shields, Leon Grady,	Elect. Med.,	Hobgood.
Sparrow, Wescott Oliver,	Special,	Chapel Hill.
Stevens, Charles Leary,	Special,	Indiantown.
Stone, Leslie Ogburn,	Elect. Med.,	Kittrell.
Tennent, George Raby,	Elect. Med.,	Asheville.
Valley, Leland Francis,	Special,	Charlotte.
Webb, Louis Harward,	Special,	Chapel Hill.
West, Ray Robert,	Special,	Dover.
Wilkinson, William Stronach,	Special,	Rocky Mount.
Wilson, Carl B.,	Special,	Greenville.
Winters, Sellie Robert,	Special,	Stem.
Wolff, Denis Roscoe,	Elect. Med.,	Rural Hall.
Woodruff, Fred Gwyn,	Special,	Sparta.
Wright, John Laurens,	Special,	Wilmington.
Yarborough, Nathaniel Bayard,	Elect. Med.,	Cary.
Yelverton, Richard Becton,	Special,	Fremont.

Senior Students in Law

Bolick, Charles Boone,	Franklin.
Campbell, William Baugham,	Washington.
Canaday, Claude Carl,	Benson.
Dortch, Gaston Lewis,	Goldsboro.
Hamlett, Robert Emmett,	Mt. Gilead.
A.B., 1904, Hampden-Sidney College.	
Jones, Leslie Edward,	Swan Quarker.
Kenyon, John Rockwell,	Newton.
A.B., 1911, Catawba College.	

Leatherwood, Joseph Gilmer, Waynesville.
Lee, Joseph Raymond, Faison.
A. B., 1911.
Oates, William Holt, Hendersonville.
Outlaw, Alexander Bate, Elizabeth City.
Parker, Ezra, Benson.
Phillips, Fitzroy Donald, Laurinburg.
Rousseau, Julius Addison, Wilkesboro.
Ruffin, Ernest Cofield, Whitakers.
A. B., 1908.
Smith, Paris Cleveland, Swannanoa.
Taylor, Walter Frank, Faison.
A. B., 1911.
Tilley, Edward Lloyd, Bahama.
Tolson, Henry Albert, Newport.
Wallace, Fitzhugh Ernest, Kenansville.
West, William Claude, Franklin.

Junior Students in Law

Axley, Lowry, Murphy.
A. B., 1913.
Beckwith, Clifton Warren, Raleigh.
Berry, Margaret Kollock, Chapel Hill.
A. B., 1913.
Brittain, Basil Frank, Ashboro.
Buchanan, Henry Frank, Charlotte.
Burnett, James Alexander, Asheville.
Cansler, John Scott, Charlotte.
Cook, Walter Watson, Fayetteville.
Coulter, William Summey, Newton.
A. B., 1908, Catawba College.
Cowles, Joseph Sanford, Wilkesboro.
A. B., 1911.
Cowles, William Henry Harrison, Statesville.
Daniel, James Manly, Jr., Deaton.
A. B., 1912.
Davis, William Cleveland, Charlotte.
B. S., 1913, Davidson College.
Dees, Julius G., Grantsboro.
Fisher, Ben, Webster.
Folger, Alonzo Dillard, Dobson.
A. B., 1912.
Gilman, Thomas Etheridge, Jacksonville.
Gooch, Lee Currin, Oxford.
Graham, Augustus Washington, Jr., Oxford.
A. B., 1912.
Hartshorn, Edwin Shotts, Asheville.
Higgins, Carlisle Wallace, Sparta.
A. B., 1912.

Johnston, Julius, Yanceyville.
Jones, Frank Carlton, Plymouth.
Joyner, Grover Hunter, Woodland.
A. B., 1909, Wake Forest College.
Joyner, LeRoy, Rocky Mount.
Kyser, Howell Royster, Rocky Mount.
Lipscombe, Sterling Albert, Durham.
McKane, Paul, Charlotte.
McNeill, Loughlin, Burgaw.
B. S., 1906, Davidson College.
Pou, James Hinton, Jr., Raleigh.
Smith, Major Thomas, Reidsville.
Spears, Marshall Turner, Lillington.
A. B., 1913.
Strong, George Vaughan, Raleigh.
Stroup, Matthew Augustus, Cherryville.
Stubbs, Harry Murden, Williamston.
A. B., 1913.
Teague, Samuel Farris, Goldsboro.
A. B., 1910.
Thompson, William Clark, Woodville.
Trotter, Benjamin Carter, Reidsville.
A. B., 1911.
Turbyfille, Joseph Manson, Waynesville.
B. A., 1913, Washington and Lee University.
Wall, Le Roy Byron, Tobaccoville.
Webster, Felix Litaker, Wilkesboro.
Whiting, Seymour Webster, Raleigh.
Williams, James McBryde, Godwin.
Williams, Warren Rand, Sanford.
Winston, Robert Watson, Jr., Raleigh.
A. B., 1912.

Special Students in Law

Brock, Burr Coley, Farmington.
Cranford, Orlando Wadesworth, Ashboro.
Davis, Orville Thomas, Waynesville.
Horton, Wilkins Perryman, Durham.
Keith, Vester Washington, Creedmoor.
Kidd, Ralph Vincent, Charlotte.
Kirby, Dallas Cecil, Rural Hall.
Lindsay, Charles Lee, Chapel Hill.
Parker, Albert D., Silver.
Raper, Paul Roberts, Lexington.
Shannon, Henry Clay, Jr., Goldsboro.
Strickland, Moses Stewart, Scotland Neck.
Tyler, Ernest Rudolph, Roxobel.
Waggoner, James Martin, Efland.
Whitfield, Henry Adams, Goldsboro.

Students in Law—(Summer School)

Alexander, Julia McGehee, Charlotte.
*Axley, Lowry, Murphy.
A. B., 1913.
Babbitt, Zebulon Vance, Bayboro.
Beam, William Speight, Shelby.
Boushall, John Heck, Raleigh.
A. B., 1910.
Branch, James Robert, Wilmington.
Brothers, William Tyndal, Elizabeth City.
Burgess, Caleb Kight, Old Trap.
A. B., 1912.
*Canaday, Claude Carl, Benson.
Carter, Thomas Clifford, Liberty.
Carver, Gordon Atkinson, Marion Station, Md.
A. B., 1909, Western Maryland College.
*Cowles, William Henry Harrison, Statesville.
Dawson, Joseph Green, Newbern.
A. B., 1911.
Dees, William Archie, Pikeville.
A. B., 1911.
*Gooch, Lee Currin, Oxford.
Graham, Alexander Hawkins, Hillsboro.
A. B., 1912.
Gravely, Lloyd Lee, Rocky Mount.
A. B., 1910, Randolph Macon College.
Gwynn, Price Henderson, Jr., Leaksville.
A. B., 1912, A. M., 1913.
*Hamlett, Robert Emmett, Mt. Gilead.
A. B., 1904, Hampden-Sidney College.
Hannah, Harry Burgwyn, Siler City.
Henry, Byron Vance, Lilesville.
A. B., 1912.
Horney, Julius Teague, High Point.
A. B., 1911, Lenoir College.
Ireland, James Franklin, Rocky Mount.
*Jones, Leslie Edward, Swan Quarter
A. B., 1903.
Jones, Walter Raleigh, Rockingham.
Jordan, John Richard, Winton.
*Kidd, Ralph Vincent, Charlotte.
King Robert Ruffin, Jr., Greensboro.
Kittrell, Robert Gilliam, Tarboro.
Ph. B., 1899.
*Lindsay, Charles Lee, Chapel Hill.
Long, Samuel Mann, Lake Landing.
Manning, John Hall, Durham.
A. B., 1909.
Marshall, Hunter, Jr., Lynchburg, Va.
LL. B., 1912, Georgetown University.
Moore, Carl Dana, Charlotte.

Roberts, Jesse Lee,	Wentworth.
*Ruffin, Ernest Cofield, A. B., 1908.	Whitakers.
Stancill, Jesse Clyde,	Charlotte.
Stockton, Richard Gordon, A. B., 1911.	Winston-Salem.
Teague, Claude Edward, A. B., 1912.	Cameron.
Teague, Dossey Battle, A. B., 1910.	Cameron.
*Teague, Samuel Farris, A. B., 1910.	Goldsboro.
Trivette, Eugene,	Harmony.
Ward, Eugene Carroll, A. B., 1911.	Waynesville.
Wharton, Cyrus Richard, A. B., 1912.	Gibsonville.
Whitney, Floyd Gilbert, A. B., 1911.	Bessemer City.
*Williams, James McBryde,	Godwin.

* Also in regular attendance, Session 1913-'14.

Students in Medicine

Austin, DeWitte Ray,	First,	Charlotte.
Bennett, Paul Archer, A. B., 1913.	First,	Winston-Salem.
Bigger, David Andrew,	First,	Rock Hill, S. C.
Boushall, Joseph Dozier, Jr.,	First,	Raleigh.
Brockman, Harry Lyndon,	First,	Greensboro.
Burrus, Thomas Preston,	Second,	Fairfield.
Castelloe, Cola,	First,	Aulander.
Conroy, Frank Davies,	First,	Cullowhee.
Cox, Russell Mills,	First,	Washington.
Craven, Thomas,	First,	Charlotte.
Crouch, Auley McRae,	Second,	Roberdel.
Eley, Clayton Willard,	Second,	Woodland.
Fetzer, Paul Williams,	Second,	Reidsville.
Gainey, John White,	First,	Parkton.
Greenwood, Adolphus Bart, A. B., 1910.	Second,	Barnardsville.
Griffin, Mark Alexander,	Second,	Wingate.
Henry, Tidal Boyce,	Second,	Wadesboro.
Huff, John Melville,	First,	Henderson.
Hunter, DeWitt Talmage,	Second,	Huntersville.
Isley, Christian Leonard,	First,	Burlington.
James, Fairley Patterson, A. B., 1912.	Second,	Laurinburg.
Jennings, Olin Henry,	Second,	Poors Knob.
Johnson, George Grady, A. B., 1913, Trinity College.	First,	Durham.

Joyner, Robert Thomas,	First,	Rocky Mount.
Kirkpatrick, Cleveland Fane, A. B., 1909.	First,	Clyde.
Kluttz, DeWitt, B. S., 1911, Davidson College.	First,	Chester, S. C.
Kritzer, Henry Roland,	Second,	Spencer.
Lassiter, Henry Grady,	First,	Lasker.
Latham, Joseph Roscoe,	First,	Belhaven.
Litchfield, Charles Aycock,	First,	Aurora.
Long, Roy Hamilton,	Second,	Monroe.
McCants, John Marion,	First,	Guthriesville, S. C.
McKay, William Peter,	Second,	Red Springs.
McKenzie, Benjamin Whitehead,	Second,	Salisbury.
Massey, William Everard,	First,	Rock Hill, S. C.
Moore, Allen Hoyt,	Second,	Washington.
Newman, Samuel Raphael,	First,	Washington.
Norburn, Charles Strickland,	First,	Acton.
Parrott, Mercer Cranor,	First,	Kinston.
Pate, James Gibson,	Second,	Gibson.
Perrel, David Franklin,	First,	Germanton.
Rawls, John Lewis,	First,	Gatesville.
Royster, Thomas Sampson, A. B., 1912, A. M., 1913.	Second,	Townesville.
Sabiston, Frank,	First,	Jacksonville.
Shaver, William Trantham,	First,	Salisbury.
Singletary, George Currie, A. B., 1905.	First,	Chapel Hill.
Smith, William Alexander,	Second,	Goldsboro.
Spence, Ralph Case,	First,	Kipling.
Spoon, Samuel Clarence,	First,	Haw River.
Starr, Henry Frank,	Second,	Salisbury.
Swindell, Lewis Holmes, Jr.,	Second,	Swan Quarter.
Tamraz, John Moorhaj,	First,	Tabriz, Persia.
Thigpen, Frank Lafayette,	First,	Tarboro.
Thigpen, Harry Gordon,	First,	Tarboro.
Uzzle, Edward Foy,	Second,	Raleigh.
Vann, Norman St. George,	Second,	Charlotte.
Warlick, Henry Clinton,	First,	Newell.
West, Clifton Forrest,	First,	Dover.
Williams, William Christopher,	First,	Durham.
Wright, Junius Holt,	First,	Siler City.

Students in Pharmacy

Adams, Wilbur Coble,	First,	Rowland.
Allen, Wilson William,	First,	Hendersonville.
Anderson, William Hubert,	First,	Mars Hill.

Andrews, Richard Homer,	Second,	Chapel Hill.
Brantley Paul,	Second,	Wilson.
Brewer, Stroud Otis,	First,	Thomasville.
Briles, David Thomas,	Special,	Fayetteville.
Cassel, Samuel Arthur,	Second,	North Wilkesboro.
Cheek, DeWitt Gilmore,	First,	Mandale.
Covington, Robert Cooper,	First,	Laurinburg.
Fishel, Arthur Levi,	First,	Winston-Salem.
Fowlkes, William Mortimer,	Special,	Rockingham.
Grantham, Leland Bert,	First,	Mt. Olive.
Guin, Clyde Doyle,	First,	Unionville.
Hamilton, John Robert,	First,	Oxford.
Harper, John Sugg,	First,	Snow Hill.
Haymore, Joe Baxter,	Special,	Mt. Airy.
Heath, David,	Second,	Rock Hill, S. C.
Hicks, William Snelling,	First,	Raleigh.
Higgins, Summey Byrd,	Second,	Leicester.
Jernigan, Rupert Watson,	First,	Mt. Olive.
Kirby, Kenneth Alexander,	Second,	Marion.
Lytch, James Edison,	Second,	Rowland.
McDaniel, William Aubrey,	First,	Enfield.
McDuffie, Roger Atkinson,	First,	Greensboro.
McInnis, Ellis Talmage,	Special,	Troy.
McPhaul, Hector Bruce,	Special,	Lumberton.
Morris, Norway,	First,	Atlantic.
Morrisette, Calvin Blackwell,	First,	Elizabeth City.
Murphy, Lonnie Weightman,	Special,	Raleigh.
Parsons, James Henry,	Special,	Newton.
Patterson, Fred Marion,	First,	Concord.
Peeler, George Calvin,	First,	Salisbury.
Pender, Frank Howard, Jr.,	First,	Tarboro.
Petrea, Fred Smith,	First,	Glass.
Pope, William Crawford,	First,	Mars Hill.
Redmon, Herman Leslie,	Second,	Marshall.
Rogers, John Lambeth,	Second,	Creedmoor.
Rosenbaum, Carl David,	First,	Tarboro.
Shaw, Rufus Sugg,	First,	Halifax.
Simmons, Hansford Randolph,	First,	Graham.
Turlington, Jesse Eli,	First,	Benson.
Warren, Julius Campbell,	Second,	Benson.
Whitmire, William Probate, Jr.,	First,	Hendersonville.

Summer School Students, 1913

Abernethy, Dora Elizabeth,	Chapel Hill.
Abernethy, Frances Truehart,	Chapel Hill.
Aiken, Alberta,	Durham.
Aiken, J. B.,	Aberdeen.
Albertson, Catherine S.,	Elizabeth City.
Alderman, Ernest Hamlin,	Greensboro.
Alexander, S. Irwin,	Huntersville.
Alexander, Violet,	Huntersville.
Andrews, Josie,	Mt. Gilead.
Andrews, Loula,	Asheboro.
Andrews, Rena,	Durham.
Arnold, Mrs. J. H.,	Neuse.
Arrowood, Sylvia L.,	Hemp.
Avery, Rossie,	Dover.
Barker, Elsie G.,	Apex.
Barnes, Irene,	Rocky Mount.
Barnette, Irene,	Roxboro.
Barrett, Mabel,	Rocky Mount.
Barringer, Ellen,	Salisbury.
Beam, John Alexander,	Woodsdale.
Beam, Mrs. J. A.,	Woodsdale.
Beam, Mike Seth,	Henry.
Bearden, Elizabeth Steele,	Chapel Hill.
Benthall, Nancy Louise,	Aulander.
Berg, Albert J.,	Greensboro.
Berg, Lydia,	Greensboro.
Berry, Ruth Beverly,	New Bern.
Best, Fannie E.,	Warsaw.
Bible, Dana X.,	Jefferson City, Tenn
Biggs, Jessie Ione,	Laurinburg.
Bigham, Anabel,	Pineville.
Bingham, Florence E.,	Daytona, Fla.
Bivens, Esther,	Salisbury.
Blanton, Lawton,	Shelby.
Blue, Flora,	Efland.
Blue, Jean P.,	Efland.
Booe, Naomi,	Cana.
Boyd, Carrie Hubbard,	News Ferry, Va.
Breedlove, Beulah Wilson,	Hester.

Brinson, Minnie,	Currie.
Brooks, Edna Wright,	Laurinburg.
Brooks, Lizzie M.,	Laurinburg.
Brooks, Olivia W.,	Laurinburg.
Brown, Anne Estelle,	Hillsboro.
Brown, Helen Margaret,	Chapel Hill.
Brown, Hennie,	Whitakers.
Brown, Mary Louise,	Greensboro.
Bruce, Mabel,	West Durham.
Bryan, Jane Lane,	Fort Barnwell.
Bryant, Ellen C.,	Rich Square.
Buchanan, Anna Meta,	Laurinburg.
Buck, G. C.,	Grimesland.
Buie, Katie McI.,	Red Springs.
Bulla, T. Fletcher,	Asheboro.
Bullard, Kate,	Fayetteville.
Burgess, William Grady,	Shelby.
Buttrick, Eula,	Asheville.
Butts, Lucy,	Mt. Olive.
Bynum, S. W.,	University.
Byrd, Mabel Winfield,	Smithfield.
Byrd, Mamie,	Morrisville.
Byrum, Emma C,	Edenton.
Camp, Lucy Lawrence,	Lincolnton.
Campbell, Ada,	Paw Creek.
Carden, Reva C.,	Durham.
Carlton, Emma Grace,	Warsaw.
Carrick, Mrs. Lizzie B.,	Spencer.
Carroll, Edith E.,	Burlington.
Carroll, Herbert,	Forest City.
Carstarphen, Augusta C.,	Roper.
Cate, Elizabeth Julia,	Chapel Hill.
Cates, Clyde Lucius,	Chapel Hill.
Chamblee, Maida,	Zebulon.
Chappell, John Thomas,	Belvidere.
Choate, Ona,	Huntersville.
Clapp, Fanny Elmo,	Burlington.
Clark, Mrs. Jessie Lee,	Elizabethtown.
Claytor, Margaret,	Chapel Hill.
Claytor, Robert Hume,	Chapel Hill.
Clifton, Pearl,	Faison.
Cline, Lottie Elaine,	Hickory.
Cline, Mae,	Lincolnton.
Coble, Ivy,	Burlington.
Coble, Roberta,	Laurinburg.

Coburn, Louis F.,	Jamesville.
Coleman, Inabelle,	Lyons.
Collins, Inda Grey,	Holly Springs.
Cooper, Geo. Long,	Graham.
Coppedge, Sallie Y.,	Wadesboro.
Corbin, Evelyn Randolph,	Winston-Salem.
Costen, Jeannette S.,	Gates.
Costen, Lucy S.,	Gates.
Costen, T. W.,	Gates.
Costen, Mrs. T. W.,	Gates.
Cothran, Allie,	Rougemont.
Coulter, E. Merton,	Connelly Springs.
Coulter, Nora Jane,	Newton.
Covington, Bessie,	Red Springs.
Coxe, Ellen,	Red Springs.
Craig, William Gilbert,	Blackwood.
Credle, Clement G.,	Swan Quarter.
Critcher, Lillie,	Wakefield.
Crowder, Anna,	Hendersonville.
Crumpler, R. P.,	Stem.
Cunningham, Dessie,	Almond.
Cunningham, Mildred,	Greensboro.
Currie, Connie,	Candor.
Currie, Hallie,	Red Springs.
Dailey, Byrd,	Burlington.
Dalton, Lillian,	Winston-Salem.
Davis, I. W.	Wanchese.
Davis, Mattie,	Asheville.
DeBerry, Lura M.,	Red Springs.
Dellinger, Mary,	Mt. Holly.
Deloatch, William Starr,	Lasker.
Dicks, Claudia,	Randleman.
Dixon, Mrs. Ethel E.,	Hendersonville.
Dixon, Juanita E.,	Winterville.
Dixon, Lizzie E.,	Mt. Vernon Springs
Dunbar, Wade Stafford,	Oak Ridge.
Duncan, Annie,	Moriah.
Duncan, Elizabeth,	Raleigh.
Duncan, Joseph L.,	Clayton.
Eaker, C. L.,	Cherryville.
Edgerton, Eva,	Goldsboro.
Edgerton, Rena,	Kenly.
Edwards, Berrie Griffin,	Goldsboro.
Edwards, Flossie,	Princeton.
Edwards, Lucile,	Seaboard.

Eller, Wade E.,	Clifton.
Evans, Josephine,	St. Pauls.
Evans, Willie McD.,	Fayetteville.
Ewell, Carrie,	Morehead City.
Faison, Julia M.,	Wilmington.
Faison, Katherine S.,	Wilmington.
Faust, Louise,	Baird, Texas.
Fenner, Jas. S. Paull,	Raleigh.
Ferguson, Kate,	Neuse.
Ferguson, Mamie Lee,	Murphy.
Ferrell, Cornelia,	Clinton.
Ferrell, Jane Amanda,	Ruffin.
Flake, Daisy Eugenia,	Wadesboro.
Fleming, Selma,	Hassell.
Forehand, Katie,	South Mills.
Foy, Grace,	Mt. Airy.
Foy, Bessie,	Winston-Salem.
Franklin, Minnie L.,	Raleigh.
Freeman, John Webster,	Mooresville.
Fuller, Carrie Hunt,	Oxford.
Garriss, Minnie,	Pikeville.
Gary, Vivian Earl,	Spencer.
Gaston, W. G.,	Lowell.
Gattis, Elizabeth Burnett,	Chapel Hill.
Gay, Ida S.,	Seaboard.
Gill, Emma Washington,	Laurinburg.
Gill, Grace Everett,	Laurinburg.
Glass, Lettie,	Greensboro.
Graham, Violet Arvin,	Richmond, Va.
Grant, Janie,	Garysburg.
Gray, Anabel,	Winston-Salem.
Green, Allene,	Durham.
Green, Mary,	Shelby.
Green, Vergie E.,	Durham.
Griffin, Marie L.	Elm City.
Griffin, Mattie Saunders,	Elizabeth City.
Guthrie, Ada,	Burlington.
Guthrie, Rose,	Engelhard.
Hadley, Lela,	Williamston.
Hall, Clara B.,	Charlotte.
Harding, M. Bessie,	Washington.
Hargrave, L. L.,	Battleboro.
Harrell, Augusta,	Sunbury.
Harrelson, Lucye,	Cherryville.
Harrelson, Pearl,	Cherryville.

Harrill, Lillian,	Forest City.
Harris, Elisha Carter,	Elizabeth City.
Harris, Nan C.,	Chapel Hill.
Harris, Sallie V.,	Youngsville.
Harrison, Thomas Perrin, Jr.,	Raleigh.
Harry, Woodfin Grady,	Grover.
Hart, Millard,	Seaboard.
Hayes, Lucy E.,	Gatesville.
Hedrick, Beulah,	Edenton.
Heller, Mary,	Spencer.
Henson, J. B.,	Dallas.
Herring, Annie Louise,	Chapel Hill.
Herring, Margaret,	Chapel Hill.
Hester, Dixie Taylor,	Oxford.
Hethcox, Winona,	Davidson.
Higdon, Fred,	Higdonville.
Highsmith, James A.,	Greensboro.
Hill, Dudley Brown,	Warsaw.
Hill, John B.,	Warsaw.
Hill, Reba,	Cliffside.
Hinshaw, Clifford R.,	Randleman.
Hodge, Hattie Elizabeth,	Efland.
Holliday, Maggie Irma,	Snow Camp.
Holmes, Mary Davis,	Woodland.
Holt, Daniel Cicero,	Burlington.
Holt, Lillian,	Smithfield.
Hooten, Maude Estelle,	Belhaven.
Hoover, Troy J.,	High Point.
Hopkins, Minnie,	Oxford.
Horney, Maggie E.,	Farmer.
Horton, Cassie M.,	Wakefield.
Horton, Marye Thomas,	Durham.
House, Nannie M.,	Stokes.
Howell, Bernice Tayloe,	Severn.
Hunter, Mrs. Betsie R.,	Cary.
Hunter, Essie Dale,	Holly Springs.
Hunter, Norfleet,	Oxford.
Hunter, W. R.,	Alexander.
Ingram, Benjamin C.,	Louisburg.
Ives, Claude Leon,	Grifton.
Ivey, Bessie F.,	Norwood.
Ivey, Mary Esther,	Cary.
James, Olive Barre,	Bishopville, S. C.
Jervis, C. Fred,	Asheville.
Jervis, Ethel,	Asheville.

Jobe, Levi Haywood,	Mebane.
Johnson, John Lester,	Dunn.
Johnson, Lillian,	Potecasi.
Johnson, Maude E.,	Rose Hill.
Johnson, Ophelia,	Rose Hill.
Johnson, Ruby Catherine,	Delway.
Johnston, Leslie N.,	Wilmington.
Jones, Alva Lee,	Wakefield.
Jones, Annie R.,	Manteo.
Jones, Frank Carleton,	Plymouth.
Jones, Mabel Webb,	Hillsboro.
Jones, Mamie Elizabeth,	Louisburg.
Jones, Margaret Cooke,	Raleigh.
Jones, Mattie Hardy,	Louisburg.
Jones, Rassie M.,	Woodsdale.
Jones, Ruth,	Smithfield.
Jones, William Henry,	Yanceyville.
Jordan, Robert A.,	Dunn.
Keehln, Louise,	High Point.
Kennett, Paul Strayer,	Stokesdale.
Kerr, Erwin,	Charlotte.
Knott, Earlie V.,	Wakefield.
Koonce, Annie E.,	Richlands.
Kornegay, Alma,	Chapel Hill.
Lansdell, Nan,	Semora.
Lassiter, Ruth Mae,	Corapeake.
Latshaw, Harry F.,	Almond.
Latta, Huldah G.,	Oxford.
Lawrence, Victoria,	Pilot Mountain.
Leach, Nora,	Franklin.
Leary, Amanda L.,	Colerain.
Leary, Bettie V.,	Merry Hill.
Ledbetter, Ida Belle,	Dome.
Lefler, Lena May,	Cooleemee.
Lloyd, Annie Tazwell,	Chapel Hill.
Lockhart, John Clegg,	Chapel Hill.
Long, Annie G.,	Matthews.
Long, Jessie Melvin,	Mollie.
Loonam, Florence,	Oxford.
Maddox, D. W.,	Durham.
Mann, Grover Carlisle,	Franklin.
Markham, Lela Belle,	Durham.
Marrow, Alice Burwell,	Henderson.
Marshall, Geo. O.,	Acme.

Mason, Nora Belle,	Edenton.
Maynard, Mrs. B. W.,	Mt. Olive.
McAulay, Mrs. Jno. A.,	Mt. Gilead.
McCall, Charley M.,	Charlotte.
McCauley, Sudie Gertrude,	Chapel Hill.
McColman, Sallie,	McColl, S. C.
McCorkle, Mary,	Alexis.
McCorkle, Rose,	Alexis.
McCreary, Jessie,	Clyde.
McCullers, Alice,	McCullers.
McGehee, Anne Ludlow,	Chapel Hill.
McGee, Ward V.,	Leicester.
McIntyre, Mamie,	Troy.
McKeown, Howard H.,	Stanley.
McKinney, Lelia,	Brown's Summit.
McKinney, Willie Russell,	Brown's Summit.
McKinnon, Flora,	Laurinburg.
McLean, Mary,	Red Springs.
McLean, Nealie,	Red Springs.
McMillan, Effie,	Parkton.
McMillan, Rosa,	Red Springs.
McNeill, Pearl,	Vass.
McQueen, Flora,	Dunn.
Medlin, Mary Woodward,	Raleigh.
Meeder, Annie Dora,	Ridgeway.
Merritt, Bess,	Mt. Airy.
Merritt, Rupert Polk,	Chapel Hill.
Middleton, Ada Maie,	Warsaw.
Middleton, Lucy,	Warsaw.
Modgette, Letitia,	Manteo.
Miller, Charles Ivey,	Richfield.
Miller, Cornelius,	Dallas.
Miller, Mamie Lee,	Newton.
Miller, Marion Robertson Spiers,	Dallas.
Miller, Mary Scales,	Dallas.
Mitchell, James Anderson,	Asheville.
Mitchiner, Belle,	Franklinton.
Monroe, Baxter C.,	Salisbury.
Monroe, Carrie D.,	Rockingham.
Monroe, Mamie,	Rockingham.
Monroe, Pattie,	Rockingham.
Moore, Agnes,	Farmville.
Moore, Ethel M.,	Blanche.
Moore, William P.,	Fonta Flora.
Morgan, Lucy Lee,	Corapeake.

Morris, Sarah Elizabeth,	Edenton.
Morrow, Helen A.,	Graham.
Moser, Early Hampton,	Zebulon.
Moser, John William,	Rural Hall.
Moses, Mildred McKee,	Chapel Hill.
Moss, Clyde B.,	Littleton.
Moss, Mattie,	New London.
Moye, Mary,	Farmville.
Nanney, H. A.,	Rocky Mount.
Newberry, Carrie,	Creswell.
Newman, S. R.,	Warsaw, Russia.
Newton, Bertha L.,	Roxboro.
Newton, Grace Edna,	Roxboro.
Nichols, Bertha,	Roxboro.
Nichols, Mary Edith,	Roxboro.
Nichols, Vienna,	Asheville.
Nicholson, Maude,	Statesville.
Nixon, Mary B.,	Sunbury.
Nixon, Myra,	Lincolnton.
Norman, Anna Pearl,	Chapel Hill.
Norman, Mamie Wilmer,	Chapel Hill.
Norman, Margaret Julia,	Chapel Hill.
Olive, Loula Bryan,	Apex.
Orr, James Lawrence,	Mars Hill.
Owens, Nellie,	Fountain.
Page, Minnie E.,	Morrisville.
Paris, Helen,	Oxford.
Paris, Mrs. James Y.,	Oxford.
Parker, Carrie Myra,	Woodland.
Parker, Josie C.,	Potecasi.
Parker, Oscar L.,	Clinton.
Parker, Roscoe E.,	Selma.
Parker, Samuel G.,	Kinston.
Patterson, Mary,	Chapel Hill.
Payne, Ann B.,	Washington.
Peacock, Josephine,	Fremont.
Peede, Dallie E.,	Neuse.
Peele, Margaret Edith,	Guilford.
Perkinson, Mamie Fleming,	Rocky Mount.
Perry, Estelle,	Macon.
Perry, Lessie,	Sanford.
Perry, Rosa,	Macon.
Phillips, Guy B.,	Trinity.
Phillips, Kate,	Roberdel.
Pickard, Bertha,	Chapel Hill.

Pickard, Carrie,	Chapel Hill.
Pittard, Bridges Winston,	Oxford.
Plonk, Ethel,	King's Mountain.
Poole, Kitty,	Clayton.
Powell, Mary Elizabeth,	Blanche.
Powell, Mary M.,	Cremo.
Prevatte, Dovie,	Lumberton.
Prevatte, Edna,	Lumberton.
Price, Mary M.,	Pineville.
Proctor, Edward Knox,	Lumberton.
Proctor, Lena,	Rocky Mount.
Pruden, Audrey,	Severn.
Ragland, Lucy,	Oxford.
Raiford, Myra,	Princeton.
Rankin, Edgar Ralph,	Gastonia.
Rawls, Mary,	Wilson.
Rea, L. M.,	Matthews.
Reynolds, Lulie Snow Virginia,	Raleigh.
Rhodes, Leland Brown,	Chapel Hill.
Rhodes, William H.,	Chapel Hill.
Richardson, Frances,	Dover.
Riddick, Laura L.,	Gatesville.
Riddick, Nannie,	Gatesville.
Rigsbee, Elizabeth,	Durham.
Roberson, Hoyt,	Pollocksville.
Roberts, Ruth Almeda,	Red Springs.
Robertson, Owen S.,	Hillsboro.
Robinson, Ellen,	Charlotte.
Robinson, Mary,	Charlotte.
Robinson, Pannie W.,	Ridgeway.
Rogers, B. M.,	Liberty.
Rollins, Etta,	Holly Springs.
Royall, Kenneth Claiborne,	Goldsboro.
Sawyer, Lida,	Belhaven.
Scott, Glenn Gordon,	Mebane.
Scott, Leslie,	Jacksonville.
Seckinger, Daniel Lamont,	Rincon, Ga.
Shankle, Pauline,	Landrum, S. C.
Shealy, Willie Brodie,	White Rock, S. C.
Sherer, Willie Ella,	Blacksburg, S. C.
Sinclair, John Frank,	Maxton.
Singleton, Ursula Florence,	Roper.
Sledge, Clara,	Louisburg.
Smith, Carrie,	Plymouth.
Smith, Emma,	Huntersville.

Smith, Henry Watterson,	Guilford College.
Smith, Marianne,	Huntersville.
Solomon, Mrs. Julia F.,	Savannah, Ga.
Spears, Joseph McKay,	Lillington.
Spence, Ralph C.,	Kipling.
Spencer, Emily L.,	South Mills
Spiers, Annie Moore,	Como.
Spratt, Thos. B.,	Charlotte.
Springle, Erah,	Beaufort.
Stafford, Susie,	Burlington.
Stanley, Cinderella,	Pleasant Hill.
Starr, Hannah J.,	Woodland.
Steele, Cornelia A.,	Lumberton.
Stewart, Eunice,	Charlotte.
Stewart, Evelyn,	Manson.
Stewart, Horace,	Unionville.
Stimson, Laura,	Greensboro.
Stipe, Lula M.,	Winston-Salem.
Stone, Alma Irene,	Chapel Hill.
Story, Thomas Edgar,	Blowing Rock.
Strayhorn, Uva,	Durham.
Street, Evye,	Mill Creek.
Strother, Ruth,	Hester.
Stroup, Mary E.,	Hickory.
Strowd, Mary Louise,	Chapel Hill.
Stuckey, Irene,	Kenly.
Sumner, Helen,	Salisbury.
Sutton, Annie,	Candor.
Swain, Herbert Linwood,	Jerry.
Swindell, Myrtle,	Belhaven.
Tayloe, Bessie,	Ahoskie.
Taylor, Agnes,	New Richmond, Ohio.
Taylor, Bettie,	Faison.
Taylor, Hattie Steele,	Gatesville.
Teague, Robert Tilden,	Bakersville.
Teague, Talmage S.,	Atkinson.
Terry, Annie Bruce,	Reidsville.
Thomas, Claudia Ila,	Jonesboro.
Thomas, William Renn,	Hiddenite.
Thompson, E. A.,	Mt. Holly
Tilley, Flossie Y.,	Hillsboro.
Tisdale, Henrie G.,	Wakefield.
Todd, Nina Lee,	LaGrange.
Tomlinson, G. W.,	Lucama.
Tucker, Lillie,	Winterville.

Tucker, Onnie,	Louisburg.
Underwood, Sadie,	Goldsboro.
Underwood, Robert L.,	Bailey.
Vassor, Willie,	Littleton.
Vernon, Carrie Sue,	Burlington.
VonGlahn, Katherine,	Wilmington.
Walker, Ivey,	Winston-Salem.
Walker, Sadie Carroll,	Winston-Salem.
Waller, Mamie,	Raleigh.
Walston, Mary L.,	Pinetops.
Walters, Mary Olive,	Hertford.
Walton, Janet E.,	Gatesville.
Walton, Lucille G.,	Gatesville.
Walton, Margaret A.,	Gatesville.
Warde, Mamie Pearl,	Windsor.
Ware, Allie Brown,	Salisbury.
Warlick, Mae,	Belwood.
Warters, Fannie F.,	LaGrange.
Watkins, Edna Earl,	Blanch.
Wellons, Ben Fletcher,	Smithfield.
Whitaker, Alice,	Chapel Hill.
Whitaker, Cary H., Jr.,	Chapel Hill.
Whitaker, Clifton L.,	Enfield.
Whitaker, Clifton L., Jr.,	Enfield.
Whitaker, Margaret,	Enfield.
Whitaker, Susie,	Enfield.
White, Allye C.,	Wilmington.
White, Lila,	Statesville.
White, Mary E.,	Scotland Neck.
White, Ollie,	Almond.
Whitley, Mrs. Helen P.,	Zebulon.
Whitley, Pauline L.,	Zebulon.
Whitley, Ruth Frances,	Zebulon.
Wiggins, Alienne,	Middleburg.
Willeford, Estelle,	King's Mountain.
Williams, Bessie,	Drum Hill.
Williams, C. U.,	Tabor.
Williams, J. A.,	Greensboro.
Williams, Lautina,	Kittrell.
Williams, Lucy,	Warsaw.
Williams, Margaret,	Kittrell.
Williams, Mary,	Drum Hill.
Williams, Mary F.,	Warsaw.
Williams, William Christopher,	Durham.
Williamson, Francis Marvin,	Pittsboro.

Wilson, Mayme,	Raleigh.
Winborne, Annie Sue,	Como.
Winfield, Florence,	Washington.
Winkler, Claudia A.,	Winston-Salem.
Womble, Lollie,	Chapel Hill.
Woody, Eugenia B.,	Woodsdale.
Woody, Marie M.,	Woodsdale.
Wooten, May Dee,	Chadbourn.
Workman, John H.,	Cherryville.
Yates, Marjorie B.,	Biscoe.
Yeargin, J. T.,	Crystal Hill, Va.
Yeargin, Mrs. J. T.,	Crystal Hill, Va.

General Summary

Boards of Government and Instruction and Other Officers

Trustees		81
Professors	48	
Instructors	13	
Fellows and Assistants	26	
		87
Other Officers		13

Students

The College:		
Senior Class	71	
Junior Class	88	
Sophomore Class	121	
Freshman Class	278	
Special Students	78	
		636
The Graduate School		42
The School of Law:		
Students in Law	101	
Special Students in Law	15	
		116
The School of Medicine:		
Second Year Students	22	
First Year Students	38	
		60
The School of Pharmacy:		
Second Year Students	10	
First Year Students	27	
Special Students	7	
		44
Total Number of Students		898
Deduct for Names counted twice		12
Total Number of Regular Students		886
Total Attendance Summer School for Teachers, 1913		500
Total		1386

The Associations of the Alumni

THE GENERAL ASSOCIATION

Julian S. Carr, President.
Walter Murphy, Secretary.

The Alumni Council

Robert Bingham, *Chairman*, Asheville, N. C.
Walter Murphy, *Secretary*, Salisbury, N. C.
J. Y. Joyner, *Treasurer*, Raleigh, N. C.

1913*

Hayden Clement, A. B., Salisbury, N. C.
W. J. Andrews, A. B., Raleigh, N. C.
J. C. B. Ehringhaus, A. B., Elizabeth City, N. C.
A. S. Barnard, A. B., Asheville, N. C.
Robert Bingham, LL. D., Asheville, N. C.

1914

D. B. Teague, A. B., Raeford, N. C.
J. K. Wilson, A. B., Elizabeth City, N. C.
P. D. Gold, A. B., Raleigh, N. C.
T. D. Warren, A. B., Newbern, N. C.
J. O. Carr, A. B., Wilmington, N. C.

1915

W. S. Bernard, A. M., Chapel Hill, N. C.
J. Y. Joyner, LL. D., Raleigh, N. C.
W. H. Swift, A. B., Greensboro, N. C.
R. H. Sykes, B. L., Durham, N. C.
George Stephens, A. B., Charlotte, N. C.

The plan of organization adopted by the General Association of the Alumni on June 2, 1911, is as follows:—1. A deliberative body to be known as *The General Assembly of the Alumni of the University of North Carolina*, composed of *delegates* from the Local Associations to meet yearly on such day of Commencement Week as has been previously arranged. 2. A directing board of fifteen to be known as *The Alumni Council*, elected by the General Assembly, the officers of which board shall be the officers of the General Assembly. 3. Local

* Term of office expires at end of Spring Term of the University of the year indicated.

Associations to be known by the names of their respective counties and towns. For a printed form of this constitution in detail application should be made to Mr. Wm. S. Bernard, Chapel Hill, N. C.

Membership in the General Association of the Alumni includes all persons who have matriculated at the University of North Carolina in any department except the Summer School and all who are or have been officers of the institution.

LOCAL ASSOCIATIONS

Alamance County Alumni Association, Burlington, N. C.
W. H. Carroll, *President.*
E. S. W. Dameron, *Secretary.*

Anson County Alumni Association, Wadesboro, N. C.
W. K. Boggan, *President.*
J. E. Hart, M. D., *Secretary.*

Bertie County Alumni Association, Windsor, N. C.
Francis D. Winston, *President.*
Francis Gillam, *Secretary.*

Buncombe County Alumni Association, Asheville, N. C.
J. C. Martin, *President.*
L. M. Bourne, *Secretary.*

Cabarrus County Alumni Association, Concord, N. C.
L. T. Hartsel, *President.*
J. W. Cannon, Jr., *Secretary.*

Caldwell County Alumni Association, Lenoir, N. C.
A. A. Kent, *President.*
L. A. Dysart, *Secretary.*

Catawba County Alumni Association, Hickory, N. C.
L. F. Abernethy, *President.*
B. B. Blackwelder, *Secretary.*

Chatham County Alumni Association, Pittsboro, N. C.
———— ————, *President.*
I. S. London, *Secretary.*

Craven County Alumni Association, Newbern, N. C.
A. D. Ward, *President.*
William Dunn, Jr., *Secretary.*

Cumberland County Alumni Association, Fayetteville, N. C.
E. J. Hale, LL. D., *President.*
C. G. Rose, *Secretary.*

DAVIDSON COUNTY ALUMNI ASSOCIATION, Lexington, N. C.
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SCHEDULE OF RECITATIONS, 1914-1915

	8:30	9:25	9:45	10:40	11:35	12:30	2:30
	A	CHAPEL	B	C	D	E	
MON.	Chem. 7A Educa'n 3, 4 Eng. 2, II Geology 1 German A, I German B German 1, II Greek 7 Latin 1, II, V Math. 1, I, III, V Math. 5 Physics 6 Pub. Spk'g. 1, VIII		Chem. 2 Chem. 7B Educa'n 9, 10 Eng. 1, IV Eng. 6 French A, II French 1, I French 1, IV Germ. A, IV Greek 2 History 1, I Latin 2, IV Math. 1, VIII X Math.. 3A Math. 8 Math. 17 Philos. 4 Pub.Spk'g 1, I	Chem. 16 Educa'n 7 Eng. 1, III Eng. 4 Geology 7 Greek 1, II History 1, II Latin 1, I, IV Latin 2, II Math. 10 Physics 1, I Zoology 1	Chem. 1 Econom. 4 Educa'n 5, 6 Eng. 9 French 1, III French 2 Geology 3 German 2B Greek A History 8 Latin 1, III Math. 1, VII IX Math. 4 Math. 7A Pub.Spk'g. 1, VII	Educa'n 1, 2 Eng. 2, IV French A, IV Germ. A, II German 3 Greek 1, I Hist'y 1, IV History 7 Latin 1, VI, VII Math. 1, II, IV, VI Math. 2, II Philos. 2	Pub. Spk'g. 1, V Laboratory: Chem. 1, I Chem. 3A Chem. 4 Chem. 8 Chem. 9 Physics 1, I Physics 4 Zoology 2
	F	CHAPEL	G	H	I	K	
TUES.	Botany 2 Chem. 7 Eng. 2, III Eng. 3 Eng. 11 Geology 8 German 6 Greek A Greek 3 Latin 1, III Math. 1, VII, IX Math. 16 Physics 4 Pub.Spk'g. 2		Chem. 5 Econom. 2 Eng. 1, II, VI Eng. 2, I, V Eng. 2A English 5 French 1, II Geology 4 Germ. A, III Germ. 1, III Greek 5 Greek 14 History 1, V History 10 Latin 4 Latin 7, 8 Math. 7 Philos. 1 Physics A Physics 10	Bot. 1 Chem. 6 Eng. 1, V Eng. 14 French A, III French 4 Greek 6 History 11 Italian 1 Latin 2, I III Latin 13 Libr. Adm. Philos. 6 Physics 1, II Physics 15 Pub. Spk'g. 3 Spanish 1	Econom. 1 Educa'n 13 Educa'n 15 Eng. 1, I, VII Eng. 10 French A, I, V Germ. 1, I Greek 15 Hist'ry 1, III History 3 Latin 10 Math. 2, I Math. 3 Math. 13 Pub Spk'g.1, VI Spanish 2	Econom. 3 Educa'n 11 English 12 German 2A German 3 Greek 1, I History 5 History 9 Latin 1, VI, VII Math. 1, II, IV, VI Math. 11 Philos. 3 Physics 5	Pub.Spk'g 1, IV Laboratory: Botany 1, I Chem. 1, II Chem. 3, I Chem. 8 Drawing 2, 3 Geology 2 Physics 1, II
	A	CHAPEL	B	C	D	E	
WED.	Educa'n 3, 4 Eng. 2, II Geology 1 German A, I German B German 1, II Greek 7 Latin 1, II, V Math. 1, I, III, V Math. 5 Physics 6		Chem. 2 Chem. 7B Educa'n 9, 10 Eng. 1, IV Eng. 6 French A, II French 1, I French 1, IV Geology 6 German A,IV Greek 2 History 1, I History 15 Latin 2, IV Math. 1, VIII X Math. 3A Math. 8 Philos. 4	Chem. 16 Education 7 Eng. 1, III Eng. 4 Eng. 16 Geology 7 Greek 1, II History 1, II History 2 Latin 1, I, IV Latin 2, II Math. 3B Math. 10 Physics 1, I Zoology 1	Chem. 1 Econom. 4 Educa'n 5, 6 French 1, III French 2 Geology 3 German 2B Greek A Greek 4 History 8 Latin 1, III Latin 9 Math. 1, VII, IX Math. 4 Math. 7A Pub.Spk'g. 4	Educa'n 1, 2 Eng. 2, IV French A, IV Germ. A, II German 7B Greek 1, I Hist'ry 1, IV History 7 Latin 1, VI, VII Math. 1, II, IV, VI Math. 2, II Physics 2	Laboratory: Botany 1, II Chem. 1, III Chem. 3A, Chem. 4 Chem. 8 Drawing 2, 3 Physics 10

SCHEDULE OF RECITATIONS, 1914-1915—*Continued*

	8:30	9:25	9:45	10:40	11:35	12:30	2:30
	F		G	H	I	K	
URS	Chem. 7 Eng. 2, III Eng. 3 Eng. 11 Geology 8 German 6 Latin 1, II, V Math. 1, I, III, V Math. 16 Pub. Spk'g. 2	CHAPEL	Chem. 5 Econom. 2 Eng. 1, II, VI Eng. 2, I, V Eng. 2A English 5 French 1, II French 3 Geology 4 Germ. A, III Germ. 1, III Greek 5 Greek 14 History 1, V History 10 Latin 4 Latin 7, 8 Math. 7 Philos. 1 Physics A Physics 10	Botany 1 Chem. 6 Eng. 1, V Eng. 14 French A, III French 4 Greek 6 History 11 Italian 1 Latin 2, I, III Latin 13 Libr. Admn. Philos. 6 Physics 1, II Physics 15 Pub. Spk'g. 3 Spanish 1	Econom. 1 Educa'n 13 Eng. 1, I, VII Eng. 10 French A, I, V Germ. 1, I Greek 15 Hist'ry 1, III History 3 Latin 10 Math. 2, I Math. 3 Math. 13 Spanish 2	Econom. 3 Educa'n 11 Educa'n 15 Eng. 12 Germ. 2A Germ. 3 Greek 1, II History 5 History 9 Latin 1, I, IV Math. 1, VIII X Math. 10 Math. 11 Philos. 3 Physics 5 Pub. Spk'g. 1, III	Laboratory: Botany 2 Chem. 1, IV Chem. 3, I Chem. 8 Chem. 9 Drawing 1 Geology 2 Physics 4 Physics 11 Zoology 1, I Zoology 2
	A		B	C	D	E	
RI.	Chem. 7A Educa'n 3, 4 Eng. 2, II Geology 1 Germ. A, I Germ. B Germ. 1, II Greek 7 Latin 1, II, V Math. 1, I, III, V Math. 5 Physics 6	CHAPEL	Chem. 2 Chem. 3A Educa'n 9, 10 Eng. 1, IV Eng. 6 French A II French 1, I French 1, IV Germ. A, IV Greek 2 History 1, I History 15 Latin 2, IV Math. 1, VIII, X Math. 3A Math. 8 Math 17 Philos. 4 Physics 11	Chem. 16 Chem. 3A Education 7 Eng. 1, III Eng. 4 Eng. 16 Geology 7 Greek 1, II Hist'ry 1, II History 2 Latin 1, I, IV Latin 2, II Math. 3B Math. 10 Physics 1, I Physics 11	Chem. 1 Econom. 4 Educa'n 16 Eng. 9 French 1, III French 2 Geology 3 Germ. 2B Greek A Greek 4 History 8 Latin 1, III Latin 9 Math. 1, VII, IX Math. 4 Math. 7A Pub. Spk'g. 4	Educa'n 1, 2 Eng. 2, IV French A, IV German A, II German 7B Greek 1, I Hist'y 1, IV History 7 Latin 1, VI, VII Math. 1, II, IV, VI Math. 2, II Philos. 2 Physics 2	Pub. Spk'g. 1, II Laboratory: Botany 2 Chem. 1, V Chem. 4 Chem. 8 Geology 4 Zoology 1, II Zoology 2
	F		G	H	I	K	
AT.	Botany 3 Chem. 5 Eng. 2, III Eng. 3 Eng. 11 Geology 6 German 6 Math. 16 Physics 14 Zoology 3		Botany 3 Chem. 5 Drawing 1 Eng. 1, II, VI Eng. 2, I, V Eng. 2A Eng. 5 French 1, II French 3 Germ. A, III Germ. 1, III History 1, V Philos. 1 Physics A Physics 10 Physics 14 Zoology 3	Botany 3 Eng. 1, V Eng. 14 French A, III French 4 Italian 1 Latin 2, 1, III Philos. 6 Physic 1, II Physics 14 Spanish 1 Zoology 3	Botany 3 Econom. 1 Eng. 1, I, VII English 10 French A, I, V Germ. 1, I Hist'y 1, III History 3 Latin 3 Math. 2, I Math. 3 Physics 14 Spanish 2 Zoology 3	Botany 3 Germ. 1A Germ. 2A Physics 14 Zoology 3	

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First Day	Second Day	Third Day	Fourth Day	Fifth Day
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Chemistry 7B	Educa'n 10	Economics 4	English 1	Chemistry 5
Education 9	German 2A	Educat'n 5, 6	English 14	Economics 5
English 6	History 5	English 9	French A	English 1
French A	History 9	French 2	French 4	English 2
French 1	Math. 11	Geology 3	Greek 6	English 5
Geology 6	Philosophy 3	German 2B	History 11	French 1
German A	Physics 5	Greek A	Italian 1	French 3
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History 15		Math. 1	Philosophy 6	Greek 5
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				Philosophy 1
				Physics A

Sixth Day	Seventh Day	Eighth Day	Ninth Day	Tenth Day
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English 1	Chemistry 7	Education 7	Educa'n 3, 4	English 2
English 10	English 3	English 1	English 2	French A
German 1	English 12	English 4	Geology 1	German A
Greek 15	Geology 8	English 16	German A	German 3
History 1	German 4	Geology 7	German 1	Greek 1
History 3	German 6	Greek 1	German 7	History 7
Latin 3	Greek 3	History 4	Greek 4	Latin 1
Latin 10	Math. 16	Latin 1	Latin 1	Math. 1
Math. 2	Physics 4	Latin 2	Math. 1	Math. 2
Math. 3	Pub. Spkg. 2	Math. 3B	Physics 6	Philosophy 2
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